Intersectoral linkages and health development

Case studies in India (Kerala State), Jamaica, Norway, Sri Lanka, and Thailand

Edited by
Godfrey Gunatilleke

Director, Marga Institute
(Sri Lanka Centre for Development Studies),
Colombo, Sri Lanka

WORLD HEALTH ORGANIZATION
GENEVA
1984
WHO offset publications are intended to make generally available material that for economic, technical, or other reasons cannot be included in WHO's regular publications programme and would otherwise receive only limited distribution. They are usually reproduced by photo-offset from typescript, rather than by letterpress, and do not necessarily receive such detailed editorial revision as other WHO publications.

ISBN 92 4 1700

World Health Organization 1984

Publications of the World Health Organization enjoy copyright protection in accordance with the provisions of Protocol 2 of the Universal Copyright Convention. For rights of reproduction or translation of WHO publications, in part or in toto, application should be made to the Office of Publications, World Health Organization, Geneva, Switzerland. The World Health Organization welcomes such applications.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

Authors alone are responsible for the views expressed in this publication.

Printed in Switzerland

84/6124 – Populaires – 5200
# CONTENTS

| Acknowledgements                                                                 | 4 |
|olie                                                                                           |
| Introduction                                                                                   | 5 |
| PART I. TRANSITIONS IN THE HEALTH STATUS OF SELECTED COUNTRIES                              |   |
| 1. Background                                                                                 | 11|
| 2. Improvements in health status viewed in relation to economic and social indicators         | 12|
| 3. Macroeconomic and social policies and their influence on health                            | 20|
| 4. The sociocultural dimension in the changing health profile                                | 26|
| 5. The political process and its interaction with social development and health               | 29|
| 6. The health infrastructure and the network of services                                     | 32|
| 7. Strategies and mechanisms for intersectoral action                                         | 36|
| PART II. INTERSECTORAL ACTION FOR HEALTH: A CONCEPTUAL FRAMEWORK                              |   |
| 8. Issues relating to persistent health problems and emerging trends                          | 41|
| 9. The main elements of a conceptual framework for strategies for intersectoral action        | 43|
| CONCLUSIONS                                                                                  | 47|
| RECOMMENDATIONS                                                                              | 52|
| REFERENCES                                                                                   | 53|
ACKNOWLEDGEMENTS

In compiling this book the editor drew heavily on the information provided by the case studies undertaken by Dr P. G. K. Panikar, Director, Centre for Development Studies, Trivandrum, Kerala State, India, and Dr G. R. Soman, Head, Department of Applied Nutrition, Medical College, Trivandrum, Kerala State, India; Dr E. Lefranc and Dr Omawale, Institute of Social and Economic Research, University of the West Indies, Mona, Jamaica; Professor J. Galtung, Institute for Advanced Study, Berlin (West), and Mr D. Poleszynski, University of Oslo, Oslo, Norway; Mr G. Gunatilleke, Director, Marga Institute, Colombo, Sri Lanka, and Dr E. Wanigasekere, Social Development and Human Resources Studies Division, Marga Institute, Colombo, Sri Lanka; and Dr P. Piyaratn, National Social Development Project, National Economic and Social Development Board, Bangkok, Thailand.

The text also derives from the deliberations of a WHO consultation of experts on the subject to which the Centre for Development Studies, Trivandrum, Kerala, generously acted as host in November 1982. Those who took part were: Professor D. Bannerji, Professor J. Galtung, Dr M. J. George, Mr T. George, Mr G. Gunatilleke, Dr A. El Bindar Hammad, Dr S. Hürst, Mr V. Kanchanasmuk, Mr C. R. Krishnamurthi, Dr E. LeFranc, Dr U. Muchtar Rafei, Dr A. Nondasuta, Professor P. G. K. Panikar, Dr U. Perera, Dr P. Piyaratn, Dr E. Quamina, Mr M. Schneider, Professor C. R. Soman, Dr E. Tarimo, Dr E. Tulloch, Mr K. N. Vesterhus, and Dr E. Wanigasekere. Mr S. Hamreil, Executive Director, Dåg Hammarskjöld Foundation, Uppsala, Sweden, Mr O. Nordberg, Assistant Director, Dåg Hammarskjöld Foundation, Uppsala, Sweden, and Dr G. Sterky, Professor, Health Services Research, Medical Research Council, Stockholm, Sweden were also present at the Consultation, making major contributions to the discussion.

The support of the Swedish International Development Authority for the case studies and the Consultation is gratefully acknowledged.
INTRODUCTION

It has been widely recognized that a sustained improvement in the health status of a population can only be achieved through the combined impact of a wide range of socioeconomic developments. In 1977, the World Health Assembly decided that the main social target of governments and WHO should be the attainment by all citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life. In 1978, in the Declaration of Alma-Ata, primary health care was defined as the key, in national health strategies, to the achievement of an acceptable level of health for all and it was emphasized that health is not the concern of the health sector alone but also requires the action of other social and economic sectors. In 1979, the World Health Assembly endorsed the Declaration of Alma-Ata and brought into sharper focus the need to coordinate a wide range of sectoral activities in order to achieve health goals. Health has therefore increasingly gained recognition as a social goal which has to be integrated into a strategy of social development. As part of the response to these perceptions, a project on intersectoral action for health was initiated in 1981 which it was envisaged would comprise a series of studies, to be followed by a programme of research activities, in an effort to enhance understanding of the interrelationship of developments outside the health sector and major changes in the health status of the population. Its main purpose was to examine how national health strategies could affect interrelationships, making them more explicit and mobilizing them for achieving health goals.

The contents of this book relate to the results of the research activities carried out during the first phase of the project in which five countries—India, Jamaica, Norway, Sri Lanka, and Thailand—participated. In India, activities were confined to Kerala State, because of the need to keep them within manageable proportions, comparable to the activities in the other countries, and the special socioeconomic and demographic characteristics of Kerala State which made it particularly appropriate for the kind of study undertaken. In the four other countries the studies were conducted on a national scale. Owing to a variety of constraints, the scale of the project in its first phase had to be relatively modest, since it was dictated by the resources available, and the countries taking part had to be selected from among those where the importance of intersectoral linkages in the field of health appeared to be recognized, and therefore scope was offered for meaningful analysis. In each country also experience in health had to be illustrated at a different level of development. Within those limits, the selection of countries was further constrained by the number of research institutions and personnel who were actively concerned with intersectoral linkages and who were able to include a study within their work programmes for the length of time established for the project.

Although the entire international range of health conditions and the socioeconomic and cultural factors influencing them were not represented, the nature of the project was such that it was possible to gain initial insight into relevant problems by concentrating on a few case studies. In these, health situations were examined in populations at different levels of per capita income and at different stages of development. The problems and issues revealed in the studies will be pursued through further research and related activities planned for the subsequent stages of the project.

In this book an attempt is made to summarize the main conclusions of the country studies and of analysis and discussion that took place at two consultations: one held in

4 The reports of the different country studies are available as unpublished documents from the respective institutions or from the Division of Strengthening of Health Services, World Health Organization, Geneva. Arrangements have been made for the publication of the reports of the studies in India and Sri Lanka.
Colombo in September 1981, while the project was in progress, and the other in Trivandrum in November 1982, after completion of the first phase. In a few instances it has been necessary to provide additional information, and reference has been made to data sources and writings other than the material from the project itself.

The conceptual approaches implicit in the work initiated under this project need to be seen in the wider context of the search in the 1970s for new and more meaningful concepts of development. In that search, the increasing emphasis given to human development was of special relevance for health goals. The central objective of development was redefined as "human wellbeing" in its fullest sense. It is towards that goal that the various processes of change - economic, technological, social, and political - need to be purposefully directed. Such an approach to development implies that the processes of change in different parts of the economy and in society are interlinked; they reinforce and nurture each other, and they need to move together for the full realization of development goals. This also means that the achievement of sectoral goals, be they in education, health, or economic productivity, requires simultaneous action in several interconnected parts of the socioeconomic system and in relation to several interlinked problems. For example, as will be elaborated upon later in this book, achievement of the goal of health for all by the year 2000 will require far more than an efficient and well-distributed national system for the delivery of health services. It will require, among other things, the simultaneous pursuit of technoeconomic goals, to increase productive capacity and economic wellbeing; social goals, to ensure that the results of technoeconomic achievement are distributed equitably over the entire population; and political goals, to enable the community to participate in the process of decision-making from the national to the local level. The capacity of a society to realize the goal of health for all by the year 2000 will then depend on where it is located in the trajectory of development. Intersectoral action for health has to be placed in such a setting, in which the different sectoral development goals, and the processes and means for achieving them, are closely interwoven.

The five case studies were of the health situations in countries with widely varying levels of per capita income and socioeconomic development. Kerala State and Sri Lanka fall into the lowest-income category, with per capita incomes of approximately US$ 200 and US$ 270 respectively. They have primarily rural economies, with the modern manufacturing sectors contributing less than 15% to the gross domestic product. Jamaica and Thailand are at different levels in the middle income group, with larger manufacturing sectors growing relatively faster. Norway enjoys a per capita income that is one of the highest in the world, with the majority of its population in the industrialized urban sector. In the case studies, therefore, the changing patterns of human health were observed over a wide span of socioeconomic development, from conditions of poverty and insufficiency to those of affluence and excess. A low-income country with higher mortality and fertility rates than Kerala State or Sri Lanka, representing a health situation more typical of the low-income group, was not included in the project because of various constraints. Kerala State and Sri Lanka were selected because of the exceptional character of their health situations, in that they offered greater scope for studying the contributions made by the non-health sectors to the improvement of the health status of the population, yet, at the same time, the lessons to be drawn from their experience were relevant for other low-income countries with much lower levels of life expectancy and higher levels of infant mortality.

In the original research design for the study of intersectoral linkages relevant to health, provision was made for the selection of several key non-health sectors with important health-related components. They included agriculture, industry, water supply and sanitation, and education. The object of the study was to identify any linkages between the selected sectors, as well as the contributions they might make to the achievement of health goals, and, in turn, the contribution the health sector could make to the programmes of the non-health sectors. Thereafter, it was planned, existing mechanisms for intersectoral action would be examined and evaluated, and new and improved forms recommended. In the course of the study, however, the scope and method of analysis changed, while the main focus and the sectoral content remained the same. The interaction of the different sectors was found to be a complex process, occurring within larger and far-reaching societal changes that were having a major influence on the health situation. A full analysis could not be carried out within the framework of intersectoral linkages alone.
In the light of these considerations the research design was revised. The first part of the study was designed to provide a historical analysis of the national experience in health. The changes in the health situation over time, leading to the current health status, were examined in the context of several other processes. First they had to be seen in the light of changes in the key sectors other than health that had contributed to the improvement of wellbeing. Next the development policies and social processes that had affected the distribution of resources and participation had to be taken into account. Then the impact of underlying cultural and religious values on community behaviour and national decision-making, in matters concerning health and the realization of health goals, had to be considered. In the next part of the study the clusters of health problems that prevailed in the different health situations were identified.

It was expected that a number of issues that might arise from a review of the experience of the countries that took part in the study would be of fundamental importance for the health perspectives and strategies of both developing and developed countries. If past achievements in the health sector have been the outcome of a complex interaction of factors, many existing outside the health sector, there may be a need for a national strategy aimed at identifying the factors involved and consciously planning and directing the process of interaction in the future.
PART I

TRANSITIONS IN THE HEALTH STATUS
OF SELECTED COUNTRIES
1. BACKGROUND

The changes in the health status of the different societies in the five countries selected for study are the outcome of long and complex processes of socioeconomic development. This has been the case not only in relation to improvements in wellbeing, but also in relation to the changes of a negative character that have produced new patterns of ill health. In the course of these processes, national policies and strategies aimed at realizing a wide range of social and economic goals have interacted with, and contributed to, the policies and programmes of the health sector itself. Other processes that did not form parts of consciously pursued strategies also had a profound effect on social conditions, the quality of life, and the health of the population. The cultural transformation that accompanied socioeconomic development changed the value systems governing human behaviour and life style. Together they produced new patterns of consumption and new conditions of morbidity. The changes in political structure and the increasing participation of the people in social decision-making had inevitable consequences for the distribution of power and income, access to resources, and the improvement of wellbeing.

The situations studied did not, however, lend themselves easily to comparative analysis, or to the identification of the relevant intersectoral processes contributing to the health status. They were selected with a view to examining the health situation as it had evolved under different conditions of development, and at different stages during the reduction in the level of mortality and the increase in the level of life expectancy. The events leading to the important social transitions and distinct improvements in wellbeing that took place in the different situations occurred at different periods, ranging from the second half of the 19th century to the mid-20th century. The overall environment and the technical and scientific resources available were, therefore, different in each case. The combination of economic and social policies, and the political processes that were associated with the changes in each situation were also very different. The traditional structures of knowledge regarding health, the social ethos, and the cultural context in which the changes occurred, were also different in each case. Despite the differences, it is possible to place the changes studied in the five countries within a broad analytical frame in which the intersectoral linkages may be examined.
2. IMPROVEMENTS IN HEALTH STATUS VIEWED IN RELATION TO ECONOMIC AND SOCIAL INDICATORS

Figs 1-5 give examples of improvements in health status over time in the five countries studied, as reflected in changes in such indicators as crude mortality, infant mortality, and maternal mortality; various economic and social indicators such as gross national product, per capita daily calorie consumption, and literacy rate are also shown. The numbers of health professionals and hospital beds in relation to the population are shown for each country, and in the diagrams for Kerala State and Sri Lanka significant changes in national policy are also shown. The study material does not lend itself to formal statistical correlation analysis: the time series and the data are too irregular for the independent socioeconomic variables. The intersectoral relationships also appear conceptually too complex to warrant simplified hypotheses about their relationship to the health situation. Nevertheless, it is possible to make the following broad generalizations from the study material available:

(1) Where there was a concentration of national resources and effort, and where curative and preventive techniques could be effectively applied through a health apparatus controlled and administered by the government, there was relative success in reducing mortality and morbidity. These conditions were met in special campaigns, such as those against malaria.

(2) The diseases for which the decline in morbidity and mortality was slow were those that could be described as poverty-related, such as respiratory and diarrhoeal disorders which have their source in malnutrition, unsatisfactory water supply, poor sanitation and hygiene, and inadequate housing.

(3) The diseases that appear to be increasing in prevalence are those normally associated with urbanization, the stresses of modern living, and the prolongation of life, such as cardiovascular disease, hypertension, diabetes, and cancer.

While the diseases distinguished in all three of the situations described above are amenable to control through intersectoral action, the most suitable are in the second group, comprising the poverty-related diseases. Although great progress has been made in reducing mortality in Kerala State and Sri Lanka, morbidity remains quite high. In Sri Lanka the high rates of morbidity specific to diseases in the poverty-related cluster, such as the diarrhoeal diseases, diseases of anaemia and malnutrition, and diseases of the respiratory system, appear to have affected a large section of the population over and above the poorest strata. Efforts to control those diseases would call for action by those responsible for health, water supply, sanitation, education, low income housing, and nutrition, beyond programmes for the alleviation of poverty alone.

Similarly, in Kerala State, the main health problems continue to be respiratory infections, diarrhoeal disorders, helminthic infections, skin infections, and nutritional deficiency diseases. They are generally faecal-related, water-borne, food-borne, or vector-borne and are more prevalent in the rural areas, where more than 80% of the people live. It thus becomes evident that in both Kerala State and Sri Lanka anti-poverty strategies must be supported by intersectoral programmes that contain a commitment to the improvement of health. In relation to Thailand the same conclusion can be reached. In fact, it is through such intersectoral programmes that both the eradication of poverty and an improved health status can be achieved.

The decline in mortality in low-income countries is a result of improvements both within and outside the health sector, in varying degrees and proportions, and at different periods of time. In Sri Lanka, for example, the effectiveness of the health sector was already established by 1945, and led to an initial decline in infant mortality and an incipient reduction in the incidence of malaria. Of the extrasectoral influences, the education campaign was probably important, especially the education of women, since the literacy rate has increased regularly from as early as 1910, reaching 40% in males and 20% in females in 1920 and 60% in males and 50% in females in 1945. During that period there were also improvements in the conditions of sanitation and personal hygiene, and attention to anti-hookworm campaigns.
Fig. 2. Jamaica

Health professionals/10,000 population 2.40 3.86 3.80 3.80
Population/hospital bed 230 241 244 290

---

PER CAPITA DAILY CONSUMPTION
(in calories)

PER CAPITA GNP
(in current prices US Dollars)

INFANT MORTALITY RATE
(per 1000 live births)

CRUDE MORTALITY RATE
(per 1000 population)
Fig. 3. Norway

<table>
<thead>
<tr>
<th>Health professionals/10,000 population</th>
<th>10.51</th>
<th>11.14</th>
<th>13.82</th>
<th>19.12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population/hospital bed</td>
<td>114</td>
<td>103</td>
<td>91</td>
<td>67</td>
</tr>
</tbody>
</table>

**Per Capita Daily Consumption**
(in calories)

**Per Capita GNP**
(in current prices US Dollars)

**Infant Mortality Rate**
(per 1000 live births)

**Crude Mortality Rate**
(per 1000 population)

**Maternal Mortality Rate**
(per 1000 live births)
After 1945, the decline in infant mortality accelerated, malaria control activities intensified, and maternal mortality declined sharply. These improvements were associated with changes within the sector such as an expansion of the health services and the institution of free medical services, including free obstetrical services. Exrasectoral improvements included the initiation of a food distribution scheme by the Government, the introduction of a rice subsidy, and the beginning of free education. However, the improvements, although substantial, were not sufficient to prevent the health of the population from remaining vulnerable. In spite of the decrease in mortality, the burden of disease — morbidity in communicable diseases and malnutrition — remained high. During the early 1970s, when there was a multifaceted economic crisis, the infant and crude mortality rates rose, despite the fact that there was no recorded worsening of the availability and functioning of the conventional health services. It thus appears that health development, if it is to be sustained, calls for mutual reinforcement by the health services and related sectors.

The per capita income in the Kerala State is very low. In the mid-1970s it was estimated at rupees 913, compared with the national average of rupees 1037 in current prices. In the early 1980s it rose above the national average to about the equivalent of US$ 200 in current prices. The rate of growth of the state domestic product was 3.7% per annum during the 1960s, dropping thereafter to 1.6%. Data available from socioeconomic surveys conducted in 1968 indicate a considerable degree of inequality within this very low average per capita income figure; a large proportion of households were living below the level of income necessary to satisfy minimum needs. According to information available from national sample surveys the nutritional intake was well below the norm, and lower than the national average.

The health and social indicators, however, showed considerable improvement. By 1979, the expectation of life at birth had risen from approximately 40 years during the decade 1940-1950 to about 65 years, compared with the national average of 56 years. By the end of the 1970s the death rate had declined to 6.8 per 1000 population, compared with the national average of 13.9 per 1000, and infant mortality had dropped to 47 per 1000 live births compared with the national figure of 130 per 1000. The birth rate had fallen by 1978 to 25 per 1000 population, while the national birth rate was in the region of 34 per 1000. The literacy rate stood at 69%, compared with 36.7% for India as a whole. The low levels of household income and the prevailing conditions of deprivation nevertheless manifested themselves in the high incidence of malnutrition and the high rates of morbidity caused by the group of respiratory and other communicable diseases associated with poverty and poor living conditions.

In its level of income and profile of social indicators, Sri Lanka bears a marked resemblance to Kerala State. In 1980, its per capita income was in the region of US$ 270. The 1950s and 1960s saw a moderate expansion of the economy, with an average annual growth rate in the region of 4.5%. In the first half of the 1970s, there was a sharp decline in the economy, with growth rates ranging from 2% to 3% per annum. In the second half of the 1970s and early 1980s there was a noteworthy improvement, with economic growth averaging approximately 6% a year during the 5-year period 1977-1981. However, as a result of the adverse international economic environment and a steady decline in trade, the increased output has yielded only a small increment in real per capita income and per capita consumption. In this economic context, the country's social advances have been exceptional. Life expectancy at birth rose from 47 years in the mid-1940s to about 68 years in the late 1970s. The infant mortality rate dropped from 140 per 1000 live births to 37 per 1000 during the same period, and the crude death rate to 6.4 per 1000 population. The birth rate declined from 38.9 per 1000 population during the period 1946-1950 to 27 per 1000 in 1979. A mass free education scheme raised the adult literacy level to about 85%, the female literacy rate being only marginally lower than that for males. But, as in Kerala State, despite these improvements in the social indicators, malnutrition remains relatively widespread and the morbidity rate for the poverty-related conditions of ill health remains high. In both Kerala State and Sri Lanka, the longer life span and changed life style have resulted in an increase in the incidence of cardiovascular diseases, cancer, and the diseases associated with old age.

Thailand, with an average per capita income of US$ 590, falls into the middle income category. It has been able to maintain a high rate of growth, averaging about 8.4% a year in
the 1960s and 7.7% a year in the 1970s. The per capita income grew during the two decades an average of 4.7% annually. (3) Unlike Kerala State and Sri Lanka, Thailand has therefore experienced a rapid improvement in economic wellbeing in aggregate terms. The distribution of income, however, continues to be unequal and quite significant regional disparities persist. The per capita income in the North-East region, for example, is estimated to be about one-sixth that of the Bangkok Metropolis and less than one-third that of the Central region. Within the context of rapid economic growth, the social indicators have shown considerable improvement, although they have not yet reached the levels of Kerala State or Sri Lanka. Life expectancy increased from about 31.6 years for males and 37.4 years for females in 1929, to 57.6 years for males and 63.5 years for females in 1975. Infant mortality had declined to below 50 per 1000 live births by the end of the 1970s. The crude birth rate dropped dramatically from 44 per 1000 population in 1960 to 31 per 1000 population in 1979. The adult literacy rate increased from 68% in 1960 to 84% in 1977. (4) Compared with the improvements in life expectancy and the demographic changes of a positive character that have been realized in Kerala State and Sri Lanka, the similar improvements in Thailand occurred at a significantly higher level of per capita income. The pattern of morbidity and malnutrition is broadly comparable to that which prevails in Kerala State and Sri Lanka, as are the patterns of morbidity and mortality associated with development and the prolongation of life.

Jamaica has a level of income and a health profile closer to those of the affluent countries; it enjoys a per capita income of US$ 1260. A relatively steady rate of growth, 4.5% a year, was maintained during the 1960s but, in the 1970s, the economy underwent severe strain and negative rates of growth were experienced. (9) Life expectancy was in the region of 38 years by the end of the 19th century, a level not reached by Sri Lanka until the 1930s; by the mid-1940s it had risen to about 53 years; and by 1979 it had reached 71 years. The death rate had already reached 13.7 per 1000 population by 1945 and had declined to 6.19 per 1000 by 1977. The infant mortality rate had dropped to 25 per 1000 live births by 1982. Although the birth rate declined steadily until it reached 29 per 1000 population in 1979, it was still relatively high for a country at the level of development and urbanization of Jamaica where approximately 41% of the population is urban. (10) The pattern of morbidity and the leading causes of death are significantly different from those observed in Kerala State, Sri Lanka, and Thailand. The cluster of diseases associated with poverty are being replaced by conditions of ill health and causes of death associated with affluence and urbanization. The first three leading causes of death are now cerebrovascular diseases, cardiovascular diseases, and malignant neoplasms. By 1978 the incidence of moderate and severe malnutrition had declined significantly.

Conditions in Norway are representative of the full profile of wellbeing and morbidity in an affluent, industrialized, urban society. The present per capita income, at US$ 10 700, is one of the highest in the world. The rate of economic growth during the decade 1960-1979 averaged 3.5% a year. Those living in the urban centres constitute 53% of the population. (11) Significant transformations in the health profile were already taking place in the second half of the 19th century and the first quarter of the 20th century, when Norway could have been regarded as a relatively poor country. Although to compare the situation in Norway at that time with that in a low-income country of today would be misleading, its achievement in improving the physical wellbeing of its population occurred well before it reached a condition of affluence. During the decade 1871-1880 the average life expectancy reached 48.33 years for males and 51.30 years for females, a level not reached by Sri Lanka until the late 1940s; by Thailand until the 1960s; and only marginally below that in India at the present time. The infant mortality rate was 139.8 per 1000 live births in the second half of the 1830s and fell to 101 per 1000 live births during the period 1876-1880. By 1978 life expectancy had risen to 72.31 years for males, and the infant mortality rate had declined to 8.6 per 1000 live births. In 1900 the main causes of death were tuberculosis, and what was reported as senility. In 1979 the main causes of death were heart disease, and cancer. Infectious diseases as causes of death declined from 32.4% in 1900 to 0.8% in 1979. Heart diseases as causes of death increased from 5.6% to 52.1% during the same period, and cancer from 7.2% to 22%. New patterns of chronic morbidity associated with increased life expectancy and changes in life style emerged.
3. MACROECONOMIC AND SOCIAL POLICIES AND THEIR INFLUENCE ON HEALTH

The influence that socioeconomic developments outside the health sector have on the health status is of such a diverse and ramified character that an attempt to include all the relevant variables in a framework of analysis is clearly not feasible. What is practical, and essential, for the purpose of establishing the key linkages between the health and non-health sectors, is a more selective analysis to enable the major socioeconomic programmes and policies to be examined and the ways in which they have affected the health situation to be delineated.

In Kerala State, Sri Lanka, and Thailand, where most of the population are rural, the changes in the profile of health and physical wellbeing would have depended on the programmes and policies of the rural authorities, and on the agricultural strategy as a whole. In that strategy, the elements of most significance would have been those that had an impact on food and nutrition; that increased productivity and diversified agriculture, raising the output of food and other agricultural products, and raising the income of one of the poorest segments of the population, the farming community; and that improved the access to resources and promoted equity in the distribution of productive assets, such as land.

It appears that in Kerala State significant reductions in mortality had occurred before the 1950s. The linkages between developments in the agricultural sector and the improvement in wellbeing reflected in the reductions in mortality are not readily discernible. It is clear, nevertheless, that in the two decades before India became independent, particularly in the State of Travancore, health strategies were supported by relatively progressive policies relating to land ownership and agriculture. After the formation of Kerala State in 1956, the initiative that had most effect on the wellbeing of the rural poor was a set of agrarian reforms, beginning with the Agriarian Relations Bill passed in 1959. The reforms granted ownership rights to 1.25 million tenants who comprised nearly 50% of the agricultural workers. It also granted ownership to the occupants of dwellings standing on "home gardens". By conferring ownership and enabling farmers to enjoy a higher income from the land they cultivated, the land reforms were significant redistributive measures, mitigating to some extent the intensity of the poverty and hardship that prevailed. Entitlements given to the owners of small allotments provided opportunities for the intensive cultivation of food crops such as tapioca, which would have had a favourable impact on nutrition.(1)

Apart from the changes in the structure of ownership described above, the agricultural sector per se did not witness a major change in the composition of its activities; on the whole, growth within the sector was low. During the entire period 1960-1975 the production of rice, the staple diet, increased by about 250 000 tonnes. Despite the fact that self-sufficiency in rice is a major objective of the Kerala State Government, production has stabilized at approximately 1.2 million tonnes, about 60% of the total consumption. The balance is imported from other rice-producing States of India. Tapioca makes up nearly 25% of the total energy available. The impact of the reforms which made land resources, even small allotments, available has to be evaluated in this context. The demographic changes resulting from the improved health status increased the pressure on land resources; the potential for extension of the land frontier and the reclamation of land for agricultural purposes appears to be almost entirely exhausted. Therefore, a significant increase in cereal production can come only through increased productivity.

Two food production sectors with better productivity records are the fisheries, and animal husbandry. Government policies and programmes helped to increase the fish catch from 150 000 tonnes in 1956 to 420 000 tonnes by the late 1970s. The per capita consumption of fish in Kerala State was, in the past, well above the national average; in 1961, for example, it was 13.5 kg per capita, compared with 2.5 kg for India as a whole. But the expansion of the export market, the change in the composition of the catch in response to the export demand, and the entry of capitalist enterprise into the fishing industry with the introduction of large-scale mechanization, introduced new factors that affected the domestic market. The price of fish rose steeply, making it a luxury item beyond the reach of the poor. A number of complex issues exist, therefore, in connection with the fishing industry in Kerala State relating to export-oriented strategies and their possible impact on domestic consumption and nutritional status. Animal husbandry is another area that has made significant progress. Milk production increased by nearly 75% between the mid-1960s and the mid-1970s, which resulted in an increase in consumption in both urban and rural areas. On the whole, however, apart from the redistribution arising from the land reforms, the agricultural programmes do not appear to have had a major impact on employment, income, or nutrition.
The growth of the other major productive sector, industry, has also been slow. The work force in industry is estimated to have declined, as a percentage of the total work force, and in absolute size. In terms of relative productivity of the sectors, Kerala State is unusual in that the productivity in the secondary sector (the manufacturing industries, construction, and electricity, gas, and water-supply) is lower than that of the primary (agriculture, forestry, animal husbandry, and fisheries) - a highly disconcerting economic situation.

Developments in other non-health sectors seem to have played an important role in improving the health status. The system of public food distribution through fair-price shops, whereby a household was able to purchase approximately 40% of its rice requirements at a controlled price considerably below the market price, was introduced in 1955. Virtually all households became eligible except those producing their full requirements. Under an extensive housing programme subsidies were granted for house construction. An important component of the programme was aimed at improving housing conditions for the lower income groups. Government investments in water supply systems provided a protected water supply to 72% of the urban and 29% of the rural population. Perhaps the most important influence for socioeconomic change was education. Adult literacy is now in the region of 70%, compared with the all-India average of 36%. The literacy rates for males and females in Kerala State, or for the rural and the urban population, do not differ significantly. In contrast, in India as a whole, the enrolment of females in primary education in the early 1960s was less than half that of males though it rose to about two-thirds in the late 1970s.

In summary, the growth of the economy in Kerala State has been sluggish and seems to have been locked into a very low level of per capita income. It has little to show in the way of major strides in economic development and changes in the structure of the economy. However, a combination of redistributive policies in land, the main productive asset of the poor, a public food distribution system, a selective programme of housing, outlays on expanding a protected water supply system, and generous investments in a public education system, have helped to some extent to provide and improve the wellbeing of the mass of the population. It is in this setting that the unusual health profile of Kerala State which stands out in such sharp relief from the national average for India can best be understood. (1)

In contrast to Kerala State, developments in the agricultural sector in Sri Lanka and Thailand suggest more positive interrelationships. In Sri Lanka, self-sufficiency in rice and several other items of food has been a development objective of the highest priority. From a situation in which it imported approximately 60% of its rice requirements in the mid-1940s, for a population of 6.5 million, it is now on the threshold of self-sufficiency for a population of 14.5 million. The main beneficiary of this development programme has been the rice-growing peasantry which was one of the poorest social groups, long neglected in an economy that placed emphasis on the plantations for export products. A result of the programme was that it helped to reduce regional disparities and inequalities among the classes. It required the settlement of sparsely populated areas of the country and the rapid development of an infrastructure for that purpose. The landless peasants in the villages comprised the population with priority for resettlement. In that manner some of the deepest pockets of poverty in the country were brought relief. Similarly, a programme for the small-scale mechanization of the fishing industry resulted in a substantial increase in the yield. Here too the beneficiaries were the low-income, small-scale fishermen whose productivity had been low and whose incomes had been insecure. In the 1960s and 1970s the Government import substitution programme was extended to food items other than rice, such as onions, chillies, pulses, and potatoes, which further helped to diversify the crops cultivated by the peasants into those yielding comparatively high incomes.

The effort to increase productivity and transform the peasant economy was part of a larger national programme in which various elements combined to give a central place to the satisfaction of basic needs. A most important element was the programme for universal free education. Through a network of primary, secondary, and tertiary educational institutions the number of females attending at all three levels rose rapidly during the 1950s and 1960s until the differences in numbers between males and females virtually disappeared. Large financial allocations enabled educational facilities to be provided throughout the country and access to education became a reality nation wide. A food rationing scheme ensured the supply of rice and several other essential food items, at either subsidized or relatively stable prices, to every household through a network of cooperatives. Part of the ration of rice was issued free in the late 1960s. After 1977, the scheme was converted into a food stamp scheme for people below a stipulated income level; nearly half the population became
eligible. A free national health system was another element of the national effort; it is examined in detail in Part I, section 6 of this book. Another area that absorbed substantial government resources was rural housing. The resettlement scheme and a programme for village expansion made considerable additions to the housing stock, improved structure and design, and raised the quality of rural housing. The public passenger transport system extended commute routes into all parts of the country. As a result, most of the formerly remote villages became accessible through entering the transport network. With a large subsidy the cheap transport system continues, providing improved access to the available services. An indication of the interaction between the developments described above and an improved health status might be obtained when conditions in a population denied full participation in the national programme are examined. This is a plantation work force of Indian descent, mainly resident in the hill country. Despite household income levels and a nutritional intake that compare favourably with those of a low-income rural household, the infant mortality and crude death rates are much higher for this segment of the population. Literacy, particularly female literacy, remains very low. Housing and sanitation conditions are extremely poor. While the health care system itself is inadequate, illiteracy and poor housing have had serious negative effects on family health care and the prevention of ill health.

The economic growth pattern of Sri Lanka has been somewhat different from that of Kerala State. The rate averaged between 4% and 4-1/2% a year over the three decades 1950-1980. Industry grew at a modest rate, somewhat faster than did agriculture, but not fast enough to produce rapid urbanization. Although the rate of economic growth has been higher than for most other low-income countries and cannot be regarded as unsatisfactory, it has not been adequate enough to expand the productive basis of the economy and generate sufficient employment for the growing work force. Unemployment reached 24% in 1975, one of the highest rates among the developing countries. In both Kerala State and Sri Lanka it seems to be evident that, with an equity-oriented strategy, the pattern and pace of economic growth have special implications for the quality of life and the health status. It would appear that unless the equity-oriented strategy is adequately reinforced with growth of output, productivity, and income, the system does not develop a capacity beyond the ability to satisfy minimum needs for survival and maintain life at low levels of nutrition. What the studies in Kerala State and Sri Lanka reveal regarding the wide prevalence of malnutrition tends to support such a conclusion.

Thailand presents a mixture of macroeconomic and social policies significantly different from those of Kerala State or Sri Lanka. Growth and the expansion of output have been emphasized more distinctly. Greater reliance has been placed on the free market economy. Less state intervention and fewer government initiatives have been directed at welfare programmes. The country was able to sustain a rapid rate of economic growth throughout the 1960s and the 1970s, resulting in a substantial rise in per capita income. It provides an interesting example of a country with economic policies that have resulted in balanced sectoral development. Agriculture grew at an annual rate of approximately 5.5% from 1960-1979 and, during the same period, the manufacturing sector expanded at an annual rate of approximately 11%. The high rate of growth in agriculture has meant a rapid increase in economic activity in the rural sector. Compared with Kerala State or Sri Lanka, Thailand has had a much more favourable man-land ratio and was able to expand the land under cultivation steadily during the 1960s and 1970s at an annual rate higher than the rate of growth of the population. That expansion resulted in a major diversification of agriculture, and the introduction of several new crops, such as maize and cassava, the output of which has grown spectacularly. In the early 1970s they were already beginning to contribute more to the country's export earnings than the traditional exports such as rice and rubber.

The influence of Thailand's macroeconomic policies in the field of agriculture on the wellbeing of the rural population has been of a mixed character. Analysts have often pointed out that rice pricing policies, by which export duties have depressed domestic prices, have been advantageous to the urban population and disadvantageous to the large number of farmers engaged in rice cultivation. On the other hand, such policies have resulted in crop diversification and enabled the country to move away from excessive reliance on a few export products. There has undoubtedly been an increase in agricultural income, in which all social groups have shared. The policy followed by the Government in regard to rice illustrates the diverse implications that macroeconomic policies could have for the income and wellbeing of various segments of the population.
The industrialization policies of Thailand have led to a massive concentration of industrial activity in the Central region and Bangkok where 62.1% of the factories are located. Most of the urban population, approximately two-thirds, is concentrated in and around Bangkok. Such a pattern of industrialization can tend to limit the extension of civic amenities and public utilities to the fast industrializing areas and lead to a relative neglect of the other regions. The internal migration rate has grown rapidly. The net increase in the migrant population has been mainly in the Bangkok Metropolis. Remarks regarding regional disparities, however, need to be qualified in relation to transport. Various considerations, including political and military ones, have led to a rapid and extensive improvement and enlargement of the transport network, which has had beneficial effects on economic growth and on the marketing of produce from the regions not easily accessible in the past.

This pattern of development is perhaps best illustrated in the regional disparity in per capita income. In 1975, the national average was 12,067 baht. The lowest, 4,991 baht, was for the North-East region and the highest, 30,161 baht, for the Bangkok Metropolis. The Central region, where most of the urban development has taken place, was next at 17,655 baht. The data available for income distribution show that the regional disparity was increasing during the period 1960-1979. The per capita income for the North-East region, which was equal to 51% of the national average in 1960, had dropped to 41% by 1979, while that for the Central Region had risen from 122% of the average to 146%. The figures for malnutrition for the different regions substantiate this regional disparity in income. The highest incidence of malnutrition was in the North-East region, with 42.7% of the population suffering from first degree malnutrition and 14.1% from second degree in 1978; compared with 36.3% and 9.3% respectively in the Central region.(12)

The spread of education and literacy has been relatively uniform throughout the country, national policies having given priority to their promotion since the early part of the 20th century. This was linked to a political goal, that of creating the conditions for a democratic system of government. The Government assumed primary responsibility for schooling and began to establish a system of state schools during the first two decades of the 20th century. Approximately 4,000 schools were functioning by 1920. In 1921 a royal decree made primary education compulsory. The 1932 Constitution stipulated a minimum of 50% adult literacy as a precondition for a fully elected Parliament. The five year educational development plan for 1967-1971 gave further impetus to the system for achieving universal primary education. By the mid-1960s, the adult literacy rate had risen to 50% and by the end of the 1970s to 84%. The female literacy rate was only marginally below that for males. In the late 1970s approximately 78% of females of primary school age were in school. In the poorest region, the North-East, 82.5% of the males and 74.8% of the females aged 6 years and over were educated up to the primary school level by 1970. These figures substantiate the fact that the benefits of the educational system reach most of the population, both males and females. However, the main focus was on primary education. In contrast to Kerala State and Sri Lanka the proportion proceeding beyond primary school was relatively small. In 1970 only 6.5% of males and 3.5% of females had been educated at secondary level. Meanwhile, however, secondary school enrolment was increasing rapidly; from 13% in 1960 to 29% in 1979.(8,13)

The educational achievements in Thailand and the rise in literacy, including female literacy, have no doubt been important contributory factors to improved wellbeing.

In housing, the focus has been on providing for the urban population. National plans have concentrated on dealing with the acute scarcity of housing in Bangkok Metropolis and little priority appears to have been given to rural housing. Rural housing conditions, in regard to structure, the materials used, and the amenities, have been poor, as in most developing countries. In 1970, piped water was available to only about 3.4% of households. About 23% of households had to depend on supply sources other than wells, and therefore unprotected. Toilet facilities were available only to about 19% of households. National policies, however, assigned priority to a programme for the supply of piped water to villages throughout the country. By 1971 a total of 15,000 villages had a piped potable water supply.(13)

Development policies in Thailand have, therefore, placed emphasis on rapid economic growth, in agriculture and in manufacturing. This has enabled a relatively strong and diversified economic base to be created, and at the same time social indicators to be reached which, while below those of Kerala State and Sri Lanka, are by no means inconsiderable.
Economically, the Government is better placed to mount programmes aimed at satisfying basic needs, eradicating poverty, and improving the quality of life. While the per capita income has risen rapidly, and with it levels of wellbeing, regional disparity has also increased. This has led to concentrated urban development in one major centre, accompanied by the pattern of mortality, ill health, and morbidity associated with industrial urban growth. Nevertheless, priority has been given to activities within certain other sectors with a critical influence on social wellbeing, such as those concerned with education, transport, and the provision of a potable water supply. Taken together, policies in the recent past have dictated a more integrated approach to the development of the rural areas, the disadvantaged regions having been selected as the main recipients. Programmes aim at the creation of employment opportunities and increased production, the provision of basic services, and the organization of activities to raise the level of community participation for the social and economic advancement of the villages.

Social and economic development in Jamaica has given rise to a health profile which is becoming closer to those of the developed countries. According to national vital statistics, the level of wellbeing during the first decade of the 20th century was considerably ahead of that reached by Kerala State or Sri Lanka. The death rate during the period 1910-1912 was estimated at 22.7 per 1000 population, while in Sri Lanka it was approximately 30 per 1000 population. In the early 1920s life expectancy was close to 40 years, while in Sri Lanka it was around 31 years. As a crown colony of the United Kingdom of Great Britain and Northern Ireland, Jamaica developed a typical export economy, supplying agricultural plantation products such as bananas, sugar, and tobacco. It was not weighed down by a large agrarian community of subsistence farmers as were Kerala State, Sri Lanka, and Thailand when they embarked on their development programmes. In the 1940s and 1950s, the Government was able to diversify the economy, with the mining of bauxite some of which is processed into alumina, manufacturing, and tourism. Emigration to the United States of America relieved the pressure from a growing work force. During the period 1960-1970, industry grew at a rate of 5% per annum, and manufacturing at a rate of 5.7% per annum. By 1950, the country was already relatively urbanized, with 50% of the population living in urban centres, mainly in Kingston which contained 66% of the total urban population. The agricultural work force declined (as a percentage of the total work force) from 49% in 1953 to 22% in 1979. By 1960, agriculture was contributing only 10% of the gross domestic product and industry was already contributing 36%. Commencing in the 19th century, the colonial government had developed a good infrastructure which had included an extensive transport system, public utilities, and irrigation facilities for the fertile, but drought-affected, parts of the country. A well organized primary to tertiary educational system was established by the 1940s. As in Sri Lanka, the system consisted of a network of State schools and schools run by religious and voluntary organizations with the help of grants. As a result, Jamaica was able to achieve a high level of literacy, both male and female, long before it entered the industrialization and urbanization phase in the 1950s and 1960s. (8, 14, 15)

The pattern of development in Jamaica is similar to that of the developed countries; agriculture's contribution to the gross domestic product declined rapidly, the secondary and tertiary sectors steadily increased their contributions, and the population became progressively urbanized and therefore within easy reach of modern services and basic amenities. The rise in the level of income, the higher educational levels of both males and females, the increasing participation of women in the organized labour force, and the easier access to modern amenities, accompanied and supported the rising health status of the population. Whereas in Kerala State and Sri Lanka imbalance existed because of poverty and inadequate economic growth on the one hand, and the demographic changes arising out of advances in the health status and in education on the other, the transition from a health profile associated with poverty to a profile progressively approaching those of the affluent societies appears to have been less contradictory in Jamaica. The economic base expanded over a long period of time, the demographic changes spread over the same period, income levels rose correspondingly, and resources for social welfare were allocated concurrently without generating acute conflict in relation to welfare conditions, economic growth, and demographic pressures. This is perhaps a unique development pattern specific to the period at which the socioeconomic structure in Jamaica changed and the manner in which the changes took place; it may not be easily replicable in low-income developing countries today.

The socioeconomic processes leading to a health profile typical of an industrialized urban society were illustrated in Norway; though the combination of elements may perhaps
give Norway a distinctive character even among developed countries. While the various developments in the non-health sectors undoubtedly contributed to the health situation, the policy makers in those sectors cannot be said to have consciously defined health objectives in relevant areas and pursued them systematically. Norway already enjoyed a life expectancy of 46 years in 1830, considerably higher than that reached a century later in Kerala State, Sri Lanka, and Thailand. The country entered the modern commercial, industrial era in the early 19th century. It had the most favourable man-land ratio in Europe and was rich in natural resources, possessing arable land, forests, minerals, such as coal and iron ore, and fishing grounds. It was later discovered to have hydroelectric power potential and still later, petroleum potential in abundance. It was therefore possible for the economy to expand steadily and for incomes and the wellbeing of the population to rise to very high levels. As in most of the other social democracies of Western Europe, the market economy is balanced by a strong welfare service. Elementary education has been compulsory and free for the age group 7-14 years since 1860; secondary education is widespread and there are many higher learning institutions. The influence of education in improving health and sanitation has been pervasive. The inclusion of the simple components of personal hygiene, health care, and environmental sanitation in the school curriculum has helped to produce a health conscious population. Compulsory health insurance, introduced in 1909, was followed by industrial legislation and the establishment of an elaborate social security system which made provisions for satisfactory working conditions for the industrial work force and the protection of various disadvantaged groups, such as the aged and the unemployed. With industrialization, it became of national concern to maintain a productive, healthy work force, and health and industrial policies were, to some extent, coordinated for that purpose. A democratic parliamentary system, and political processes that promoted participation and civic involvement at local and national levels provided a sound basis for such progress. An analysis of the situation in Norway must, therefore, consider each of these developments as an interrelated whole.

In the transition to a lower mortality rate, the virtual disappearance of the infectious and contagious diseases was a critical factor. The incidence of tuberculosis, which was a major cause of death at the beginning of the 20th century, declined from 618 per 100 000 population in 1900 to 145 per 100 000 population during the period 1941-1945, before the first effective treatment, streptomycin, was marketed. Obviously the general conditions of wellbeing, through good housing, adequate nutrition, proper sanitation, and an increasing capacity for self-care on the part of families and small communities, were the major contributory factors. The rapid decline in mortality and corresponding increases in life expectancy were most pronounced after 1920. Between 1830 and 1920 life expectancy rose by only about 10 years, from 46.5 years to about 56 years, but thereafter it rose by approximately 5 years each decade, reaching 71 years by 1950. The reasons that have combined to produce this dramatic improvement in 3 decades need to be studied in greater depth. That it is the cumulative outcome of social and economic changes, taking effect as new generations with higher educational levels enter adult life, is evident however. It needs to be compared with the similar dramatic improvement in life span that occurred in Kerala State and Sri Lanka from the second half of the 1940s.

A different set of issues related to intersectoral action for health is raised, however, when the new patterns of ill health that have emerged in Norway with affluence and longevity are considered; for example, the cardiovascular diseases, malignant neoplasms, mental disorders, the increasing accident and suicide rates, and the musculoskeletal diseases of senility. Many of these patterns of morbidity have their sources in the far-reaching changes in life style, living conditions, and value systems resulting from industrialization and urbanization. In Norway can be found examples of health-oriented programmes in non-health sectors: food and nutrition programmes in relation to changing food habits and changing life style, campaigns against smoking, and anti-pollution measures in industry. However, such programmes were formulated in response to problems only after they had assumed critical proportions. The health hazards of affluence were not anticipated, and there was no conscious preventive strategy. Lessons might be learnt from the experience in Norway in regard to the intersectoral action that could be initiated to cope with emerging patterns of morbidity and mortality.
4. THE SOCIOCULTURAL DIMENSION IN THE CHANGING HEALTH PROFILE

The case studies reveal the vital importance of the sociocultural factors involved in the evolution of modern health systems in the societies examined. Although it is even more difficult to recognize and evaluate the effect of sociocultural factors on the health situation than to recognize and evaluate macroeconomic and social factors, several valuable insights were gained that need to be taken into account in planning intersectoral programmes for health.

In a developing country the modern health system has to grow within the traditional structures of knowledge, attitudes, and practice in regard to health and health care. In some situations the traditional structures may provide the basis for, and tend to support, the changes and improvements in health status; in others, the pre-scientific explanations of the functioning of the human body and the origins of ill-health may hamper the development of a modern health system. This is true, to some extent, of Kerala State, Sri Lanka, and Thailand, which have deeply rooted, old cultures, and where health care based on modern scientific knowledge is being introduced in societies that have their own ideologies regarding health and their own elaborate systems of medical care. Such a situation is very different from that in which a modern health system has evolved in an industrialized country, as in Norway. There, the scientific structure of knowledge grew out of questions and solutions within the societies themselves, and the process of displacing the pre-scientific structure of knowledge was fundamental and internal. The interaction of tradition and modernity in the field of health in developing countries manifests itself in very diverse forms as is shown in the five case studies. It is, therefore, dangerous to form generalized conclusions. Nevertheless, those responsible for health policies have to be fully sensitive to this type of problem.

Perhaps more than any other society included in the study, Kerala State provides an illuminating example of the complex way in which tradition and modernity can interact in the case of health. It had a deeply entrenched traditional social structure, based on the Hindu caste system with its rigid social stratification. It was a system which discriminated severely against the members of the lower social strata, restricting their access to social amenities and income-earning opportunities. These disadvantaged groups had little opportunity to break out of the cycle of poverty, malnutrition and an insanitary physical environment, and a high mortality rate. Yet, over the last 100 years, a number of factors have combined to reduce the social rigidity and produce an outcome in the field of health quite unusual for a low-income country.

A highly developed system of indigenous medicine remains popular to this day and has acquired a reputation in certain branches of medicine which extends throughout India and to countries abroad. Such a system, although it may in some respects have run counter to the western medical system, promoted attitudes to health care, diet, personal hygiene, and sanitation conducive to the acceptance of more modern approaches. Special mention must be made of the high standard of cleanliness maintained in a Kerala household, even when housing conditions are poor. Other cultural elements such as the practice of yoga, which perceives health as a total system - physical, emotional, mental, and spiritual - and prescribes elaborate procedures for achieving total wellbeing, influenced the concern for health.

The rapid spread of education, and the high level of participation by both males and females, is another development that seems to have had its roots in a cultural tradition and value system attaching great importance to education and intellectual attainment. The widely distributed access to education has evidently been one of the key factors in promoting social mobility and reducing the rigidities of the caste system. It was noted during the case study that the society in Kerala State was traditionally matrilineal, which is different from the dominant patrilineal and patriarchal pattern of Hindu society.(16) The effects of this were not, however, explored. It may explain why Kerala State has been receptive to the spread of female education and changes in the role and status of women. The entry of a small Christian minority also had an influence on life style and values, loosening some of the rigidities and making the people more receptive to the influence of the secular science of the west. The elements of the traditional culture have therefore been recombined in Kerala State, in a manner quite different from the ways in which similar elements have interacted in most other traditional communities of India. Nevertheless, traditional beliefs and practices in regard to health have continued to reinforce some of the causes underlying ill health. Superstitious beliefs regarding the origin of ill health, reliance on rites, and certain
religious practices including exorcism, that also exist in rural Sri Lanka, incite resistance to modern health practices. Ignorance of the bacterial causation of disease prevents the control of the major infectious and contagious diseases accounting for a high proportion of morbidity and mortality.

While the cultural effect on health in Sri Lanka is similar in many ways to that in Kerala State, Buddhism, the religion of the majority of the people, has produced a culture that distinguishes Sri Lanka from India. Buddhism produces a society less rigid than under the Hindu caste system with less social stratification. It also defines the role and status of women in a manner less discriminatory than the Hindu caste system. The agricultural caste, which has assumed the dominant position in the hierarchy, has a broad social base composed of parts of the rich elite and the poorest peasants. There exists a tradition of public medical care that stretches far back in history, with which the Buddhist monks have been closely associated. Health services have been accorded a high place in a value system based on compassion towards all living creatures, and the alleviation of pain and suffering. As in Kerala State the indigenous medical system was highly developed and the physician was a venerated figure. The monk, the physician, and the teacher were the tutelary elite of the rural community. The underlying value system gave high priority to religion, education, and health. The Buddhist ethic prescribed a way of life in which moderation, avoidance of excess, and self discipline were indispensable preconditions for deliverance from suffering. Physical wellbeing and the ideology of health took their places within that ethic. Again as in Kerala State, traditional knowledge, and attitudes and practices regarding health, derived from the indigenous system of health care, promoted an intelligent awareness and concern in regard to health, and in many ways created a receptive environment for the acceptance of the modern health system. This is illustrated by the fact that both the indigenous and the Western systems of health care continue in parallel, and a large part of the population makes use of both systems selectively for different ailments and diseases.(17,18)

At the same time the negative effect of certain elements of tradition and the superstitious beliefs regarding the causation of disease and its cure, is evident in Sri Lanka in the same way as in Kerala State. Dietary taboos have an adverse effect on nutrition. Traditional weaning practices appear to neglect the need to introduce semi-solids into the infant diet at a critical period of growth, a neglect that seems to be a major contributory cause of malnutrition. Ignorance of the bacterial causation of disease persists, meaning that there is no preventive care and infectious and contagious diseases spread. The different levels of education among generations in the same household are reflected in conflicts between tradition and modernity which influence attitudes and approaches to health care.

In addition to these persisting negative elements, new health problems associated with the life styles of affluent societies are emerging in both Kerala State and Sri Lanka as a result of the cultural dislocations and the changes in life style and values. They can best be discussed in the section on Norway which follows.

The case study in Norway provided a view of the pervasive and far-reaching effects of culture, value systems, and life style on attitudes to health and the priority given to health concerns in society. The Protestant ethic would appear to have played a major role in shaping a cultural environment and a value system conducive to an improving health status. Maintaining good health through self-care was regarded as an individual's moral responsibility. Ill health was a sign of God's displeasure; a manifestation of sinful living. Moderation and the avoidance of excess were essential attributes of a blameless life.

Norwegian society was also homogeneous to a high degree, religiously, ethnically, and linguistically, and the health ethos was one shared by the population as a whole. With this went an egalitarian approach to social relationships which promoted the equitable distribution of the benefits of high economic growth. Those were the cultural attributes of a system under which the infectious and contagious diseases largely associated with poverty and an insufficiency in material wellbeing were rapidly controlled.

The present pattern of morbidity, however, reflects a fundamental shift in values and life style that has caused the equilibrium of the earlier phase to be destroyed. The stresses and hazards of modern working and living conditions, the environmental pollution of
an industrial society, the erosion of basic human relationships founded on the family, the breakdown in community life, the loss of effective community control over social processes, and over-consumption and excessive materialism, are the cultural attributes of the present system under which new patterns of ill health have evolved, predominantly diseases of the heart and circulatory system, mental disorders, the diseases of old age, and cancer.

The cultural dimension in health was not explored in Jamaica and Thailand in the same detail as in the studies in the other three countries. The health situation in each of the two countries results from a different mixture of cultural features, from which valuable insights could be gained. Jamaica is representative of a migrant society, relatively free of the weight of historical tradition, unlike the other societies studied. This may have produced an environment more adaptable to change, and more readily able to adjust to the requirements of a modern health system. There may be negative factors attributable to the migrant society, which has no tradition, which might manifest themselves in a rapid disorderly movement towards the imbalances and patterns of morbidity evident from the Norwegian study. A deeper inquiry into the interrelations between culture and health in Jamaica might yield useful information.

Thailand, although it shares certain common features with Kerala State and Sri Lanka, has a distinct cultural pattern of its own. It has not undergone the same political processes of democratization as have Kerala State and Sri Lanka. Yet Thai society has not suffered from the hereditary forms of entrenched social stratification to be found in a society regulated by a caste system. It is therefore socially more mobile and culturally more homogenous. Thailand was one of the few countries of Asia not subjected to direct colonial rule. It retained its independence throughout the colonial era and maintained cultural continuity without a forced or violent intrusion of modern western culture. This means that Thai society may not have undergone the type of trauma often engendered by colonial rule which results in a complex form of defensiveness and hostility to western culture and what it can offer. It has often been remarked that there exists a cultural openness in Thailand that allows foreign values to be accepted with a sense of pragmatism and without the deep-seated conflicts typical of many traditional societies. If this is true, the cultural environment and the value system in Thailand have been such as to facilitate transition to a modern society. Another interesting fact about Thailand is that the modern health system has not yet fully penetrated the rural areas, and the traditional system with its healers, together with self-medication, remained the main source of health care at the time crude death and infant mortality rates were declining significantly. Further analysis could throw interesting light on the role of the traditional system and its practices and how, combined with the effect of mass primary education, they have brought about changes in the health status.

It can be seen that the constraints imposed by cultural factors, and the positive effect they have on developments in the field of health, are of diverse character, covering various aspects of social behaviour. What have been singled out for comment are those aspects of traditional culture, such as indigenous systems of health care, and structures of knowledge relating to health, value systems, and life style, that emphasize moderation and accord high priority to health, and that can create an environment conducive to the growth of a modern health system. There are also negative elements in traditional cultures, such as superstitious beliefs and practices relating to health care and nutrition, and standards that restrict the role of women. Cultural factors that promote equity, social mobility, enhancement of the status of women, and a better distribution of resources are crucially important for improvement of the health status. The patterns of ill health that have emerged with industrialization and affluence have their sources partly in the cultural transformation that has taken place, resulting in new life styles and value systems.
5. THE POLITICAL PROCESS AND ITS INTERACTION WITH SOCIAL DEVELOPMENT AND HEALTH

In four of the study areas - Kerala State, Jamaica, Norway, and Sri Lanka - a vigorous political process, which produced a representative form of government, accompanied the social and economic changes. The political institutions evolved over a considerable period of time. Norway is a constitutional monarchy, having developed its institutions in the 19th century and completed the democratic process with universal adult suffrage in 1913. In Jamaica and Sri Lanka limited forms of representative government were introduced while they were still part of the British Empire. They evolved into fully-fledged parliamentary systems with political parties, and members of parliament elected periodically by universal adult suffrage. Kerala became a state under the Indian States Reorganization Act in 1956 and functions under a democratic parliamentary system. As a state it has a substantial degree of autonomy, while it also sends elected representatives to the national Parliament. In each country local government institutions of a representative character have developed simultaneously with the national parliamentary systems and have taken responsibility, to varying degrees, for the provision of public utilities, roads, and sanitation, and for town planning, the regulation of residential and other building activities, and, in some cases, services such as health and education. The political evolution in Thailand has been significantly different. The intention to establish democratic institutions in stages was announced by Royal Decree in the 1920s. What developed thereafter was a political system in which the military elite was dominant and whatever representative component there was took little part in the process of national decision-making. More recently, however, the effort to institute a democratic form of government resumed.

In Kerala State, Jamaica, Norway, and Sri Lanka the political systems at various stages of evolution enabled the conflicts of interest of various social groups to be aired continuously and to be resolved with fair degrees of consensus. In Norway, through the political system, capital and labour were able to express their competing claims and interests and to obtain proportionate shares of the national income. It enabled the Government to ensure an equitable distribution of resources and an adequate measure of social welfare and social security. It provided the environment for the growth of a vigorous system of local government. Up to the first half of the 19th century a high degree of municipal autonomy was brought about but this was later eroded by a technocratic structure that became increasingly centralized. In addition, a proliferation of voluntary organizations was instrumental in mobilizing community effort for various social activities, among which activities directed at health occupied an important place. The average Norwegian adult belongs to several voluntary organizations. Their strength and the extent of popular participation and coverage can be measured by the fact that, though the total population of Norway is only 4 million, all the voluntary organizations together have a membership of 12 million. They operate in all parts of the country and extend to all sections of society, even those not easily reached by the public services. The growth of the health system, therefore, has to be viewed from within this institutional framework. Firstly, because the diverse conflicts of interest in society could be represented, a certain degree of equity in the distribution of resources was ensured, and this provided the foundation for an improvement in wellbeing and graduation to a higher health status. Secondly, a considerable degree of decentralization was promoted and the administration of health care was brought closer to the community and to some extent within its control. Thirdly, the political environment allowed freedom of association, and enabled informal groups to be activated, thus mobilizing community participation in the field of health through a great many voluntary organizations.

Lessons can be learnt from the experience of both Kerala State and Sri Lanka in regard to the linkages between the political process and the promotion of equity and wellbeing at an early stage of development. The post-independence political developments in the two areas have followed a somewhat similar pattern. In Kerala State the politics of the government have alternated between right of centre and radical left, and the system has had to be responsive to the demands and needs of the poor majority. This has led to the introduction of effective social measures such as land reform; the emergence of organized labour as a powerful influence; and the institution of social welfare measures, such as the distribution to the public of a rice ration at a controlled price that has provided some measure of food security to the poor. The active participation of the population in political affairs has been made possible by the rise in literacy and educational level. There is as yet, however, no decentralization of local government at the district or block (divisional) levels. Elected local councils (Panchayats) function close to the village communities but they have very limited executive or financial power. Nevertheless, Kerala State, with its educated and politically active population, offers scope for the growth of an effective local government system, and for a higher degree of community involvement through voluntary organizations.(1)
During the three decades of Independence, the politics of the Government of Sri Lanka have also alternated from right to left. Almost the entire spectrum of political belief, from conservative to radical marxist, has held office and contributed to the evolving socioeconomic system. Universal adult suffrage and the competitive political climate undoubtedly enabled the poor rural majority to secure the considerable degree of redistribution of social welfare benefits that has already been discussed. They led to the active involvement of women in the political process, giving them a weight that made the political elite respond to their concerns. The attention paid to maternal and child health in the 1930s and 1940s is an example. A member of parliament functioned as a patron and an ombudsman; his popularity, particularly in the two decades prior to Independence, was largely determined by his capacity to secure a wide range of state services for his electorate, among which health and educational facilities assumed high priority. The local government system developed in the late 19th century. Four tiers of local government institutions, from village to municipal council, were spanning the entire country by the time it achieved Independence. Initially, among such institutions were sanitary boards and local government boards with a mixed composition of official and elected representatives; elections were by restricted suffrage. They were replaced progressively by bodies fully elected by universal adult suffrage. The local government system provided the opportunity for the population to participate in a wide range of activities including those connected with public health, water supply, and sanitation.  

In the nongovernmental sector, a large number of voluntary associations were established, prominent among them the village-level rural development societies, which were mainly concerned with the improvement of the social and economic infrastructure, such as roads, community centres, and buildings for public services. Another network of nation-wide voluntary organizations was composed of the women's associations, concerned with the welfare of women. A voluntary organization that played an important role in the anti-tuberculosis campaign was the Association for the Prevention of Tuberculosis. A voluntary movement that devoted itself to rural welfare and that gave an important place to community health, child care, and nutrition was the Sarvodaya movement.  

Recent changes in the framework of central government administration envisage a significant degree of decentralization resulting in a devolution of authority to the 24 districts. An elected district development council is the main political authority, supported by village councils composed of both elected and official representatives. The political and administrative structures in Sri Lanka therefore contain most of the elements necessary for a participatory process of development, leading to the improvement of wellbeing on the basis of equal distribution. These include a representative national political system, the decentralization of government administration and political authority, a network of local government institutions, and a growing informal sector comprised of several active voluntary organizations. Conversely, the growth of the state welfare system has encouraged the community to be heavily dependent on Government intervention and assistance and militated against self-reliant community action. One ethnic minority in the country has demonstrated how the absence of positive sociopolitical elements can adversely affect the wellbeing of a community; the population of Indian descent resident in the plantation sector did not enjoy political rights and its participation in the national programme was marginal; these politically disadvantaged conditions have combined with various other factors to produce relatively poor social indicators.  

The situation in countries with developed participatory political systems seems to indicate that representative forms of government are essential to a pattern of development in which considerations of equity and the distribution of wellbeing receive adequate priority. This does not, however, imply that a particular political system, such as the competitive party system, or parliamentary institutions, are necessary conditions for the improvement of wellbeing, or for widely distributed access to health care and health services. What can be stated with a degree of certainty is that, in the case studies described in this book, the political frame and the socioeconomic changes that have taken place are closely associated. The political processes have helped to engineer equity-oriented social changes in situations where a variety of economic systems operate irrespective of the influence of market forces and state planning. The nature of participation and its influence on health status would be very different, and a study of it would have to be approached differently, in socialist societies such as China and Viet Nam that have been able to achieve high social indicators at low levels of income. In the case of Thailand it might be argued that the non-representative character of the political system may have reinforced the inequalitarian pattern of
development. It is relevant to note that the political goal of democracy gave impetus to the programme of education in Thailand, resulting in a rapid expansion of the educational system and a rise in levels of adult literacy. It is interesting that, with the goal of popular representation, and political participation by the people, other far-reaching social changes were set in motion. Together with economic growth, mass education played a vital role in improving wellbeing in Thailand.
6. THE HEALTH INFRASTRUCTURE AND THE NETWORK OF SERVICES

The health infrastructure and network of available facilities in each of the countries taking part in the study should be viewed in relation to the socioeconomic, cultural, and political conditions already described.

In Kerala State, according to data available, the share of government expenditure allocated to health rose from about 1% during the period 1863-1868, to about 4% during the 1940s; 12.5% by the end of the 1950s; and about 14% during the 1970s. Little information is available on private medical expenditure, but during the years 1957-1958 the per capita expenditure was rupees 0.52 a month in the rural areas and rupees 0.86 a month in the urban areas; and in the period 1973-1974, it was rupees 1.13 a month in both the rural and the urban areas. (1)

Over the years an extensive medical care network has developed, which includes the public and the private sectors and the western and indigenous systems. In 1980-1981 the total number of beds in government allopathic institutions was about 29,000, giving a bed-population ratio of 1.2 beds per 1000. By 1975-1976 the number of hospitals was 135, dispensaries 252, primary health centres 163, and other institutions 7. The regional differences that existed in earlier years are gradually diminishing; yet the ratio of beds per 1000 population is 1.34 in Trivandrum-Coimbatore compared with 0.85 in Malabar. A general conclusion that emerges is that curative facilities and the institutional network for curative treatment have been given priority in the system over promotional and preventive measures. In the existing structure, for example, primary health centres number only 132, an average of 1 to approximately 192,000 population.

In addition, there are government institutions for treatment under the traditional systems, such as Ayurveda and Unani, and also homoeopathic institutions. In the years 1975-1976 there were 63 ayurvedic hospitals with 1274 beds, and 574 dispensaries. Even though ayurvedism has an ancient heritage, has proved to be efficient, particularly for certain types of chronic ailment, and is widely popular, it has not been given as much attention by the Government as has allopathic medicine. There are 8 homoeopathic hospitals with 250 beds, and 113 dispensaries in the State.

There has been a substantial reduction in the area served by each allopathic institution and an increase in the average number of persons served. Over 50% serve an area of less than 25 km², while another 35% serve an area of between 26 km² and 50 km². The compound growth rate for inpatient treatment is 6.02% and for outpatient treatment 5.06%. Both these figures are more than double the compound growth rate of the population. In 1977 1.33 million inpatients were treated and 28.59 million outpatients.

The 4 medical colleges in the State provide not only medical education facilities but also the most modern medical care. In recent years, the tendency to depend on technological progress, particularly in dealing with the growing problems of cardiovascular diseases and neoplasms, has led to a diversion of resources.

Sri Lanka is served by the two major health care systems - the allopathic and the ayurvedic. (20) The latter has a history in the country of about 20 centuries, while the allopathic system was introduced during the period of British rule; it expanded during the final years of British rule and in the post-Independence era. Today an extensive network of government medical institutions covers all parts of the country and, although regional disparities exist, all sections of the population have access to a relatively well-organized hierarchy of health services.

Health care is primarily the responsibility of the Government. In government institutions it is provided free of charge and is available to the entire population, regardless of income. The health services are delivered through a network of institutions, and cadres of field workers, organized separately for curative and preventive work. The curative services are provided through a hierarchy of institutions, ranging from visiting stations up to central dispensaries, maternity homes and rural hospitals, district hospitals, base hospitals, and specialized institutions. There are over 900 such institutions, spread across the country. The total bed-strength of the Government institutions is approximately 40,000, or approximately 2.6 beds per 1000 population. In conjunction with the general
health care system, there have been special campaigns, organized in accordance with national priority for the prevention and control of diseases that have been major causes of morbidity and mortality. One of the first was a hookworm campaign. It was followed by an anti-malaria campaign, an anti-tuberculosis campaign, and several other campaigns. The Government component of the ayurvedic system is limited to a few hospitals and dispensaries.

The national health system is supplemented by a private sector of significant size practising both allopathic and ayurvedic medicine. There are several private allopathic hospitals and dispensaries, mainly in Colombo and its suburbs. The number of allopathic physicians in private practice is estimated at about 1000. The ayurvedic services are predominantly in the private sector and are widely available throughout the country. Registered practitioners of ayurvedic medicine number approximately 10,000, but it is estimated that there are as many as 20,000 unregistered practitioners.

The allopathic or western health care system, which evolved mainly from the model adopted during the period of British rule, could be described as curative-oriented, institution-based, centralized, and non-participatory. Very early in the development of the system the preventive and curative services were structured as parts of one integrated health care service. However such an organizational structure did not ensure a proper balance between the two services. The curative services soon became dominant and attracted an overwhelmingly large share of professional and financial resources. The physical accessibility of the services alone did not mean that the health care system was functionally effective. Several adaptations were made during the 1970s. The family health services and primary health care were given increasing emphasis. In order to overcome existing deficiencies and to respond to primary health care needs for achieving the goal of health for all by the year 2000 the Government plans to restructure the system on a 3-tier health centre model. The integration of services, community involvement, emphasis on prevention, and intersectoral collaboration, are the main features of the reoriented system.

In Thailand, the health system is comprised not only of the Ministry of Public Health network but also of a number of other public and private networks that serve both general and specialized needs. The components outside the jurisdiction of the Ministry of Public Health include hospitals and clinics operated by other government agencies, foreign missions, and private voluntary organizations. The network of government health services, which includes provincial and district hospitals, small health centres, and midwifery stations, extends throughout the country with varying degrees of coverage. In addition there is a large cadre of unlicensed physicians and traditional healers who practise extensively in the rural areas and in numerous commercial pharmacies, and probably account for the preponderant share of health care to the rural population. In 1975 the ratio of allopathic physicians to population was approximately 1:8150.

Starting towards the end of the period covered by the Third National Economic and Social Development Plan (1972-1976), a new phase of health planning began. The Government had realized that the existing health services and the delivery system could not cope effectively with the health problems existing in the rural areas or reduce the inequality that existed between the privileged minority in the urban areas and the large underprivileged majority in the rural areas. The modern health infrastructure, both government and private practice, was heavily concentrated in the urban areas; approximately two-thirds of the urban population lives in Bangkok Metropolis. This reflects the unevenness in the distribution of modern health facilities. At the beginning of the Fourth National Economic and Social Development Plan (1977-1981), the government health sector covered only 20% of the population. This realization led to the health budget being increased to 4.5% of the total national budget, double the proportion allocated in the First National Economic and Social Development Plan (1962-1966). This enabled the health care infrastructure to be expanded and the number of health cadres to be increased substantially.

A standard pattern has been developed for the delivery of health care through a hierarchy of facilities. At each level, a clearly defined package of health care is to be provided to a population of appropriate size. In due course each district with a population of 30,000 will have a 30-bed district hospital; each commune with a population of 5000 a health centre staffed by two auxiliary health workers; and each village with a population of about 2000 a midwifery centre. Voluntary health workers and village health communicators will contribute to the health care network. The emphasis is on developing the infrastructure for primary health care and increasing the capacity for self-reliance of local communities.
The health system in Jamaica comprises a network of 394 health centres providing primary health care and 29 national hospitals for secondary and specialized care. In addition, there are five private hospitals and various other medical centres operated by the private sector. For an estimated population of 2.192 million the number of hospital beds is 6306, a ratio of 2.87 beds to 1000 population. This includes general hospitals, specialized institutions, and private hospitals. The national cadre of physicians has increased to 588. The 394 health centres are organized into five types: Type 1 is the smallest unit, serving a population of approximately 4000 and closely integrated with the community. Types 2-5 serve progressively larger populations with higher levels of professional care and services, the institution at each level supporting those at the lower levels.

The health facilities are fairly evenly distributed, with a slightly greater number in the capital, Kingston, and access to them is easy. The per capita expenditure on national health services increased from about J$6 in 1946 to J$23 in 1970, at constant 1974 prices. In the period 1981-1982 expenditure on health was approximately 13.4% of the national budget; and expenditure on health services per capita in real terms was at least 30% higher in 1980 than in 1970. Although the total contribution to the health services increased substantially, the services provided did not expand proportionately. The major increases were in the services provided by the health centres and the accident departments in the hospitals.

The Government of Jamaica, like most other governments in the Caribbean area, is giving priority to primary health care as the key to achieving health for all by the year 2000. It is, therefore, attempting to provide a basic level of health care, which is seen as the point of entry into the national health care system, and which is available to every citizen at a delivery point within, or close to, the community however remote it may be. The increase in the number of health centres was very rapid during the 1970s; from 154, or 1 centre to a population of 13 615, in 1977, to 394, or 1 centre to a population of 5560, in 1982.

In Norway, the Ministry of Social Affairs has overall responsibility for the national health services. The executive body is the Directorate of Health, headed by a medical administrator, the Director-General of Health Services. In some matters, the Directorate deals with the communes and local health officers; in others it works through the county authorities and the county public health officers. Each commune has a board of health with the local public health officer as chairman. In the rural districts and small towns the public health officer is also a general practitioner; in the larger towns the public health officer is usually a full-time employee. The main responsibilities of the local boards of health are in environmental hygiene, food control, communicable diseases control, family health, occupational health, and mental health.

Under the Hospital Act, which came into force in 1970, the county councils have full responsibility for the planning, construction, and operation of medical institutions. Plans have to be approved by the Government, while the institutions themselves and their medical activities are supervised by the Director-General of Health Services. The costs of operation of health institutions are met by the national health insurance scheme and by the county councils. Since 1980, the national health insurance scheme has met about 50% of the costs of operation by providing block grants to the counties on the basis of need. All hospital care, including drugs, is free of charge to the patient, as is transport to the hospital.

An increasing range of specialized services is now available in hospital outpatient departments. They are provided partly by private specialists, partly by hospital physicians on a private basis, and partly by the institutions themselves as integral parts of their services. The volume of outpatient care provided is expected to grow rapidly as a result of the reorganization of the hospital services.

Basic medical care is provided either by the local public health officer (district doctor) or by a private practitioner. The district doctor who, in many areas, is the only physician, is paid a salary by the Government for public health work and receives the same fees as a private physician for general practice. The patient has a free choice of physician. Physicians are paid on a fee-for-service basis, most of their bills being reimbursed by the national health insurance scheme according to a fixed scale. Drugs for certain specified chronic diseases are provided free of charge, and the cost of delivering pharmaceutical products to the patient is also met.
The trend now is to build medical centres in country areas or towns, in order to provide services beyond the scope of a single physician. They are likely to become the main centres for the provision of health care outside the hospital.

Immunization is given against diphtheria, tetanus, whooping cough, poliomyelitis, measles, tuberculosis, and rubella. A central tuberculosis case register was established in 1962, and case-finding concentrates on high-risk groups, selected on the basis of an analysis made by means of the Register and the records of the National Mass Radiography Service. Special attention is given to the care of former tuberculosis patients with additional problems, such as mental illness, mental retardation, or alcoholism. A new system, using electronic data processing, has been initiated by the National Institute of Public Health which will provide health authorities with immediate, week-by-week, information on communicable and notifiable diseases.

Since 1973 the public health officer has been responsible for planning maternal and child health services in the commune, while the county public health officer is responsible for coordinating the services throughout the county. The national health insurance scheme meets 75% of the cost of an approved programme.

School health services are the responsibility of the local public health board. Every child must have at least one medical examination every 3-4 years. Measurements of height and weight, tests for tuberculosis, and certain immunizations are carried out annually. All girls aged 13-15 years are offered vaccination against rubella.

The health centres for mothers and children are also concerned with accident prevention and control. Nurses give advice to parents on the commonest types of accident affecting children and the means of preventing them, and the regular examination of children at the centres includes a check on whether they have been involved in an accident.

The public dental service, organized and financed by the county authorities, offers free dental care to children aged 3-17 years, and treatment at 50% of cost to regular attenders aged 18-20 years. The Government refunds 60% of the salaries paid by the county authorities. The public dental service has been introduced in 15 of the 19 counties; in the other 4, the school dental service is being maintained until it can be replaced by the public dental service. The free dental care for children includes a regular oral examination by a dentist, including X-rays, and dental health education. The school dental service, organized and financed by the municipal authorities, provides free dental treatment to schoolchildren to an extent decided by each municipality. The State refunds 25% of the salaries paid by the municipal authorities.

Two types of institution provide care for the elderly: old people's homes, which are part of the social services; and nursing homes, which are part of the health services. The nursing homes are run by the county authorities who meet roughly half the cost, the other half being covered by the national health insurance scheme. Health planning throughout the 1970s was directed towards the provision of care in institutions for about 7% of the population over 70 years of age.

Under the Mental Health Act of 1961, the county authorities are responsible for planning, establishing, and operating institutions for those with mental disorders. Stress is laid on the organization of psychiatric services within the communities, in accordance with the comprehensive psychiatric care concept. Up to 1970 care of the mentally handicapped concentrated mainly on building up residential and day institutions. Since then it has been recognized that the community also has a responsibility to provide the necessary services, in a decentralized, but integrated, way.

Particular attention is being paid to nutrition, the health hazards of tobacco smoking, and the abuse of alcohol, drugs, and narcotics.

Of fairly recent concern is the development and use of health technology which is hampered by the fact that it is governed by few rules and regulations. Existing legislation relates to electrotechnical equipment and the use of radioactive materials, but the control of medical apparatus is left, on the whole, to the manufacturer and the user. Work is in progress with a view to introducing appropriate regulations.
7. STRATEGIES AND MECHANISMS FOR INTERSECTORAL ACTION

In all case studies light is thrown on the way in which the non-health sectors have contributed to progress in health care and the improved health status of the population. It would be useful to examine the extent to which the intersectoral linkages relevant to health goals have been recognized and made the basis for consciously and systematically pursued strategies and programmes for alleviating health problems and improving health conditions. From most of the case studies it has become clear that more often than not the contributions of the non-health sectors to the attainment of health objectives have been made in the pursuit of each sector’s own specific objectives, whether they have been in the field of agriculture, food and nutrition, industry and urbanization, housing, water supply, or education. The health-related component in each was seldom made explicit in terms of the benefits that would accrue to the health sector. It cannot be said, therefore, that national policies and programmes in the field of health have contained clearly distinguishable intersectoral approaches to health problems. Interaction between the activities of the health and other sectors, and the benefits arising from them, have come about in the natural process of development.

This does not mean, however, that intersectoral action for health on a planned and systematic basis is not necessary or desirable. Evidence from the case studies supports the argument that health objectives could have been realized sooner and at less cost had the linkages between the health and non-health sectors been more clearly perceived and acted upon more effectively. Some of the particular problems of ill-health that have persisted in Kerala State, Sri Lanka, and Thailand appear to require intersectoral action on a planned basis if they are to be overcome. This is particularly true of the group of communicable diseases associated with low income, inadequate nutrition, sub-standard housing, and poor sanitation. Newly emerged health problems could have been foreseen and perceived more clearly, and preventive action taken more systematically, had intersectoral approaches been adopted.

Planned intersectoral action appears to have been partly responsible for some of the successful efforts in the field of health in the situations analysed in the case studies. A set of linkages that could be perceived led to collaboration between the health and education sectors. School programmes for health care, nutrition, the monitoring of health and immunization, health education at an early age, and the promotion of habits, attitudes, and practices conducive to health, formed parts of national strategies in some of the countries studied. As is clear from the case studies in Norway and Sri Lanka, the school system is recognized as an important entry point for a national health strategy.

Other instances where planned intersectoral action was necessary and proved effective were the special campaigns directed at health problems of high national priority. The nutrition and food policy programme in Norway, aimed at the increasing incidence of cardiovascular diseases, is an interesting example. The effort to encourage changes in diet, with less starch and more protein, required concerted action in areas as varied as pricing policies in agriculture and fisheries, consumer protection, the food industry, food legislation, nutrition education, and health policy. A more limited form of intersectoral coordination is seen in the disease-specific campaigns, such as the anti-malaria campaign in Sri Lanka, where the activities of various government departments with a bearing on the campaign objectives needed to be coordinated. A major portion of the activities had to be carefully coordinated with those of an agricultural settlement programme where land clearing, irrigation, agriculture, water supply, the health services, housing, the educational facilities, and other amenities, formed an integrated package.

From all the case studies the impression was gained that, recently, the need for intersectoral action in the pursuit of health objectives has been more clearly recognized. The central role of primary health care in national health strategies means that there has been a significant shift of emphasis towards the use of intersectoral approaches, through which an improved health status becomes part of an integrated strategy for the satisfaction of basic needs, and for social progress as a whole. The search for intersectoral approaches is also in response to new health problems emerging with industrialization, urbanization, and the use of new technology in agriculture. Governments are becoming increasingly aware that health problems arising out of industrial pollution, occupational hazards of various kinds, the consumption of processed foods, and the use of agrochemicals, require concerted action on the part of the ministry of health and several non-health sectors. They have, therefore, begun to establish mechanisms for intersectoral action to achieve specific health goals.
Although there is no formal mechanism for intersectoral action and coordination for health in India, in Kerala State there are a number of health-related programmes and projects that have adopted intersectoral approaches requiring coordination between ministries and departments. The composite programme for women and preschool children is the most appropriate example, as it has health care components and other than health care components, such as kitchen gardens, poultry units, and employment generating activities. Another programme that requires intersectoral effort is the nutrition intervention programme. Some of the programmes have been implemented through voluntary agencies such as the women's clubs. However, examples of programmes in which the health component is linked to clearly defined non-health components, such as agriculture, housing, and water supply, which become mutually supportive, are very few, though there are some in the nongovernmental sector implemented by voluntary agencies. Examples are the Nirmalalayam, a branch of the Nirmala Niketan Institute of Social Service, where health activities are combined with a training and production centre, and the St Joseph's Social Uplift Centre where, again, health activities, such as maternal and child health care, immunization, and sanitation, are combined with a training and employment programme seeking to alleviate unemployment and poverty. Although many of the elements of an intersectoral approach to health exist in Kerala State, including a large number of active voluntary organizations (e.g. the Kerala Sastra Sahitya Parishad, which seeks to bring science into the everyday life of the people, and the Programme for Community Organization), better coordinating mechanisms are needed as well as a more effective institutional framework at national and sub-national levels.

In Sri Lanka, a national health council has been established which has, as its executive arm, a national health development committee. The Committee has under it six subcommittees dealing with specific subjects which cover a wide range of health-related areas falling within non-health sectors. The Prime Minister is the Chairman of the National Health Council and its members consist of the ministers of nine health-related ministries. The aims of the Council are to promote an awareness that health is a national concern which cuts across sectors and that the activities of non-health sectors in health-related areas need to be coordinated at national level. At sub-national level, in the district, the division, and the village, there are to be similar mechanisms to strengthen intersectoral action for health.

In Thailand, health is one of the goals for comprehensive social development and intersectoral coordination is effected through the National Economic and Social Development Board. For the preparation of the Fifth National Economic and Social Development Plan (1982-1986), a social development planning committee was established, together with an intersectoral/interagency core group. Intersectoral collaboration related to health objectives will fall within this framework. In the health strategy for the period 1982-1986, primary health care constitutes the main approach, with emphasis on action at village level. Efforts are concentrated on selected specially disadvantaged areas, such as the North and North-East regions. Health programmes are seen as integral parts of the larger social development plan, which includes economic, political, cultural, and social elements; in the villages they form one component of a larger intersectoral programme that has as its other components activities aimed at production and the creation of employment, nutrition, education, housing, and water supply. It could be said that such an intersectoral approach does not focus specific attention on health objectives. However, as one component of an intersectoral strategy for social development health activities are strengthened by support from the other components.

In Jamaica, the activities of specific programmes and advisory bodies involve intersectoral action which encompasses health objectives. Examples are the Basic Services Programme for Children, the Pesticides Advisory Committee, the Nutrition Advisory Council, programmes for the efficient supply and delivery of water, and the First Rural Development Programme. All of these include a health component that has to be implemented in coordination with non-health components for the achievement of a number of objectives, among which health is one. In each case the possibility of achieving the health objective has been enhanced by the health component forming part of an intersectoral programme. The non-health objectives, related to crop production and food storage in the case of the Pesticides Advisory Committee, or the processing and marketing of agricultural products in the case of the Nutrition Advisory Council, have had to be reconciled with the health objectives. These examples illustrate the importance of intersectoral action in an effective health strategy.
In Norway, intersectoral and interministerial coordination has long been part of the strategy for the achievement of health objectives. It was so during the earlier phase, when the cluster of communicable diseases had to be controlled, and is still so now that patterns of morbidity have their origin in the consumption habits, life style, and social environment created by industrialization. Legislative and regulatory expedients, special campaigns such as programmes advocating changes in diet, or national propaganda and action to discourage smoking, all require intersectoral coordination and are examples of the type employed in the pursuit of health objectives. They, however, have been specific responses to anticipated health problems, or to problems perceived after they have emerged. It cannot be said that an overall intersectoral approach has been applied by which it has consciously been attempted to discover the interrelations between the health and non-health sectors or to determine in what way developments in the non-health sectors are linked or have been responsible for the new profile of health and morbidity. Industrial policies, for example, have not included specific health goals, and new projects continue to be initiated without regard for their long-term implications for health.

In none of the case studies was there evidence of a systematic effort on the part of the government to evaluate socioeconomic policies in relation to their influence on the health status of the population. This would apply to a whole range of policies pursued in relation to economic or sectoral objectives, such as the promotion of exports, the replacement of imports, and the diversification of crops, which could have serious adverse effects on the health and nutritional status of the population. For example, in Kerala State, it is likely to be affected by policies to export more fish, in Thailand by export taxes on rice, and in Sri Lanka by policies relating to the export of coconuts. In this context, the policies followed by governments in adjusting to problems originating from their external payments situations invariably have serious implications for their social sectors. The conditions imposed by international institutions and donors often involve economic adjustments that have a detrimental effect on social wellbeing and on the health status. The criteria used in formulating macroeconomic policies to cope with such situations therefore need to be reappraised.

It is clear from the case studies that in most of the five countries, it is difficult to achieve intersectoral collaboration and coordination within the administrative systems that have evolved. In each sector the lines of authority run vertically to the bureaucracies at the centre which are distant from the local scene of action. Such structures discourage horizontal intersectoral linkages at national and sub-national levels. This tendency is reinforced by the existence of smaller bureaucracies, leading to compartmentalization. Each department jealously guards its own area of authority and is suspicious of intrusions from other departments and ministries. This creates an environment inhibitory to intersectoral coordination. An important condition for affecting horizontal linkages and intersectoral coordination is a high degree of decentralization. This has become an objective in most of the countries studied, and efforts to restructure the administration are already being made in Sri Lanka.

Decentralization is also an important condition for another essential element of intersectoral coordination, community participation. It is within the community that, because of the nature of its needs and the way in which it responds to them, collaboration extends across sectoral boundaries and pressure is brought to bear on bureaucracies to approach development problems in an integrated manner. National health strategies are giving recognition to the increasing importance of community participation, and programmes, especially those involving primary health care, are being organized in a way that facilitates the participation of small communities. From the experience in Kerala State, Sri Lanka, Thailand, and Jamaica it would seem that it is at the microlevel, where the local community can be readily motivated to participate, and where non-health activities can be linked to the delivery of primary health care, that the greatest potential exists for intersectoral action for health. Essential for community participation are the voluntary organizations through which citizens are mobilized and encouraged to be self-reliant in undertaking social action of various types. This has been clearly demonstrated in Norway. In the other countries there is evidence from the case studies of the growing importance of voluntary agencies in reaching a successful process of community participation, and the vital role they play in intersectoral action for health. The existence of a vigorous nongovernmental voluntary sector is an indicator of the quality of the political environment and social processes at work in a society.
PART II

INTERSECTORAL ACTION FOR HEALTH:

A CONCEPTUAL FRAMEWORK
8. ISSUES RELATING TO PERSISTENT HEALTH PROBLEMS AND EMERGING TRENDS

From the health profiles of the five areas studied emerge certain broad patterns of change in the causes of morbidity and mortality as they have made the transition from low to high life expectancy. Kerala State, Sri Lanka, and Thailand have broadly similar patterns at one end of a spectrum. Norway's is at the other end of the spectrum and Jamaica's is between the two, closer to that of Norway.

In Kerala State, Sri Lanka, and Thailand the major causes of ill health are a group of communicable diseases - diarrhoeal diseases, gastrointestinal infections, and respiratory infections - together with parasitic infections, undernutrition, and anaemia. Although mortality caused by these diseases has gone down, morbidity remains quite high. The control or eradication of communicable diseases and diseases caused by undernutrition in Jamaica and Norway was associated with the rapid increase in well-being and its equitable distribution. This hard core of ill health has persisted in Kerala State, Sri Lanka, and Thailand even though the death rate has dropped sharply and the average life span has increased quite significantly, particularly in Kerala State and Sri Lanka. The system was able to deal effectively with health problems that could be attacked directly by means of medical procedures, such as immunization or effective curative measures, and some diseases were brought under control. But while it had developed the capacity to prevent death from a whole range of communicable diseases, it was not equally successful in preventing the ill health they caused. Diseases that require elimination of the root causes that lie in poverty, malnutrition, and insanitary living conditions have not easily yielded to the direct methods available to medicine. They require combined action to attack a number of interlinked conditions, originating in both the health and the non-health sectors, which produce and sustain morbidity and cause human beings to be continuously exposed to the risk of disease. These conditions of exposure and risk lead to continuing morbidity even when the curative services are able to reduce mortality.

While the poverty-related diseases remained the major causes of morbidity, in Kerala State, Sri Lanka, and Thailand patterns of ill health and mortality associated with progress, an urban life style, and the prolongation of life were emerging. The cardiovascular diseases, malignant neoplasms, and diseases of the nervous system were becoming major causes of mortality and morbidity. With the growth of industry, technological change, and urbanization, hazards to health and life from accidents, poisoning, occupational diseases, and pollution of various types were increasing. In Kerala State, data collected from the major hospitals in 1978 and 1981 indicated that the greatest number of deaths were from the cardiovascular diseases; (1) they accounted for 25% in 1978, increasing sharply to 34% in 1981. In both years cancer was the second cause of death, 16.7% in 1978 and 17% in 1981; and accidents from poisoning and other causes were the third in 1978, 12.3%, and the fourth in 1981, 12%, gastrointestinal diseases having taken third place in 1981. Similarly, in Sri Lanka and Thailand cardiovascular illnesses and cancer have moved up the scale as major causes of mortality.

In all three areas the health situation has become more complex with the emergence of a poverty-related profile of ill health in association with progress and increased life expectancy. This has created new problems in allocating scarce resources for dealing with the different clusters of diseases. It might be argued that priority should remain with the cluster of poverty-related diseases, as they affect the majority of the population, particularly the disadvantaged and the poor. However, the diseases associated with the emerging patterns of ill health are more likely to affect the affluent minority. They require costly curative services and, given the prevailing structure of power, are likely to preempt a large share of the available resources.

These issues require careful consideration by policy makers. The mortality data indicate that the diseases associated with progress and longevity are affecting persons from all social classes, although a larger proportion may come from the urban affluent society. The unfolding profile of ill health suggests that as socioeconomic changes take place with progress and if current trends are allowed to continue, morbidity and mortality patterns will change to show that these diseases are affecting an increasing proportion of the population. The patterns of ill health seem to follow a certain sequence. It is therefore important to gain a fuller understanding of the epidemiological and wider social factors involved, so that appropriate preventive strategies may be adopted.
Experience in Jamaica and Norway has lessons to offer in this regard. In both countries, the communicable diseases and malnutrition are well under control. Diseases of the cardiovascular system, cancer, degenerative diseases and the chronic illnesses of old age, and varying degrees of mental ill health, have replaced them. It seems that the socioeconomic processes leading to the elimination of the first cluster of diseases, themselves created the pathogenic conditions for the emergence of the second. Data from the study in Norway present a somewhat grim account of the present health profile. In 1979 heart diseases accounted for 52.1% of deaths and cancer for 22%. The suicide rate increased from 72 per million population during the period 1951-1955 to 121 per million population in 1979, a disconcerting trend indicating a deterioration in mental health. Morbidity data were revealing. Though people live relatively long lives, 2.62 million people, or 65% of the population, were suffering from a chronic illness in 1975. The number of persons needing professional psychiatric treatment has been increasing and prevailing trends suggest that 10-20% of the present population will become neurotic and about 33% will need psychiatric treatment.

From the case study in Norway the following pathogenic factors can be selected for inclusion in a possible analytical framework: (a) industrial and traffic pollution; (b) stress, alienation, and loneliness; and (c) overproduction and overnutrition. All are related to the social processes that have taken place with industrialization and urbanization and the social conditions and changes in life style that have resulted. The pathology produced by such conditions could, once it arises, be cured by means of increasingly complex and ingenious ways of repairing the human system and prolonging life. How to prevent the ill health arising from these conditions is less clear. Preventive approaches are currently manifested in specific responses to particular problems, such as nutrition campaigns or propaganda against smoking, alcoholism, or drug addiction. However, the pathogenic factors mentioned above extend into areas less responsive to policy directives and less amenable to readily implementable strategies, where preventive approaches call for cultural readjustment, changes in life style, and social reorganization. They require a new ethos for good health in recognition of the fact that the state of wellbeing or ill health is the product of a total way of life, and that a health goal strategy requires modalities for preventive care that embrace the entire network of interrelated causes cutting across various sectors.
9. THE MAIN ELEMENTS OF A CONCEPTUAL FRAMEWORK FOR STRATEGIES FOR INTERSECTORAL ACTION

Analysis of the health situations in the five areas studied illustrates the vital importance of approaching and understanding health problems in their dynamic historical settings. First, they have to be regarded in relation to the transition that takes place with progress: from a high mortality rate to a low mortality rate; from a profile in which particular patterns of health and mortality predominate to another with dominant patterns of a different kind. In Jamaica and Norway the pattern of ill health associated with poverty and undernutrition that predominated during the period of high mortality have been overcome and nearly eliminated. A different set of health conditions has replaced them, associated with a longer life span, higher incomes, and industrial urban living. In Kerala State, Sri Lanka, and Thailand, the process of development has led to conditions in which both patterns coexist, although the pattern of ill health associated with poverty and undernutrition remains dominant. The dynamics of health perceived in this way has important implications for the health strategy as a whole; for determining priorities in the allocation of resources between different clusters of diseases, and between preventive and curative action; and for timely intervention in order to control emerging patterns of ill health.

Analysis of the data from the five case studies points to three well-defined clusters of morbidity and mortality that occur during the transition in health, and each cluster appears to be related to a certain set of socioeconomic and sociocultural conditions. The predominant cluster comprises the group of communicable diseases - diarrhoeal diseases, gastrointestinal infections, respiratory infections, and parasitic infections - which continue to account for a high proportion of morbidity and mortality in Kerala State, Sri Lanka, and Thailand, but which have been brought under control in Jamaica and Norway. The diseases in this cluster thrive where there is high exposure to risk and low resistance to infection. High exposure to risk accompanies deprivation and a combination of elements such as poor environmental sanitation, unsatisfactory housing conditions, inadequate water supply or water of poor quality, problems relating to knowledge, attitudes, and practices in regard to personal hygiene and self and family health care, and diet. Low resistance to infection is the direct outcome of undernutrition. Both are closely associated with low income and poverty. A second cluster consists of health problems that are man-made and are related more specifically to progress and the disequilibrium resulting from it. They arise from industrial pollution, large projects that create major environmental perturbations or changes in the ecosystem, the use of modern industrial and agricultural methods, such as food preservatives and pesticides, working environment, particularly that of modern industry, and accidents in modern industry and transport. The third cluster relates to the changes in life style that have accompanied industrial growth and urbanization, and to conditions of material affluence and abundance. They include the cardiovascular diseases, cancer, degenerative diseases and the chronic ill health of old age, and mental disorders; they have their sources in overnutrition and excesses in consumption of various types, prolonged stress, changes in social institutions affecting the durability of close human relationships, alienation, loss of community existence, and the extension of life span. For the purpose of the discussion that follows the three clusters of diseases will be referred to as cluster 1, cluster 2, and cluster 3.

The analysis of health situations in terms of clusters of diseases and patterns of ill health constitutes a useful tool. Each cluster can be related historically to the transition in health. It can be linked to the sociocultural and economic transformation that takes place in the process of development. But the concept of classifying in clusters needs to be studied in greater depth and its application refined further. The data base on which the clusters were classified for Kerala State, Sri Lanka, and Thailand was not very reliable. Data collected from medical institutions tend to distort perception of the actual health situation in a community. The clusters themselves may not be as distinct and separable as is implied by the concept. For example, the contents of cluster 2 merge at points with those of cluster 3. The diseases in cluster 3 are not found only in industrial urban cultures; they have always existed in all societies; it is to the extent that they have become dominant that they are attributed to industrial urban societies. Finally, a more problem-oriented way of isolating patterns of ill health is to examine the relations between the incidence of different types of ill health and their occurrence in different social groups, income brackets, work situations, localities, and types of regional environment. Here variations in natural environment and climate cannot be ignored. The conditions and levels of exposure that promote respiratory or gastrointestinal infections in the temperate zones will be different from those in tropical areas.
The analysis of ill health by applying the concept of classifying in clusters, by social group, by work situation, and by other non-health social and cultural configurations, would require the collection of health data and methods of health research that have not received much attention in the past. Tracing the effects of the pathogenic factors of the various kinds indicated may require a wider epidemiological search than has been undertaken hitherto. But the epidemiological method that starts primarily with disease and tends to be disease-oriented and disease-specific is not sufficient. It has to be combined with other methods that approach the exploration from the opposite end, that is start from the condition of wellbeing; and that enable the intersectoral linkages that have led to the condition of wellbeing, reduced the exposure to health risks, and raised resistance as a whole to be determined, cutting across a large spectrum of ill health. Such linkages are evident in the five areas studied and have already been enumerated. They indicate that a health strategy needs to be defined in terms of a broader social development strategy and the health components linked with the non-health components within a larger social development plan. What this signifies is that the health sector has to be more actively involved in social development planning.

From the experience in the five areas studied important lessons can be drawn for the health strategies of countries at different points in transition with different clusters of diseases dominating the patterns of ill health. Kerala State and Sri Lanka, with low per capita incomes, have achieved high social indicators in terms of mortality and life span. Thailand, with a middle level per capita income approximately twice that of Sri Lanka, has also achieved fairly high social indicators, though they are as yet below those of Kerala State and Sri Lanka. These differences, reflected in the higher health status of the population at a lower level of economic wellbeing, are worthy of note. In both Kerala State and Sri Lanka efforts to improve the health status formed part of a process of development that was aimed at satisfying basic needs, and was equity-oriented. Firstly, there was substantial investment in the health sector itself, to create a network of curative and preventive facilities that could reach all strata of the population in all areas. In Sri Lanka free health services became available. Secondly, public policies on food and food distribution offered a fair measure of security to the poor. Thirdly, mass education, free, or heavily subsidized by the government, rapidly raised the levels of both male and female literacy. Fourthly, agricultural policies, land distribution, and agrarian reforms raised productivity in the backward rural areas and improved access to resources. Fifthly, various programmes for housing, water supply, and sanitation improved the infrastructure for the provision of the basic amenities. Progress in the health sector in Kerala State and Sri Lanka cannot, therefore, be examined in isolation from progress in the non-health sector; it has been an interrelated process. Mass education in particular has had a crucial effect. Since women play a key role in the provision of health care, the education of females greatly influenced the health status of the population by enhancing their capacity to respond to health initiatives. Education raised the level of health consciousness within the family, and improved maternal and child care. It changed the reproductive behaviour of women, resulting in lower birth rates and the improved wellbeing of mothers and children. The effect of mass education can be seen in Thailand where, despite a high degree of social and economic inequality and much less social welfare than in Kerala State or Sri Lanka, it has been available nationwide and has raised the rate of literacy to about 85%.

In addition to the low income, low mortality, long life span combination in Kerala State and Sri Lanka, other social and political processes contributed to the pattern of progress. In both, the equity-oriented pattern of progress came from a political system that allowed for the articulation of demands from various social groups. The political environment encouraged the mobilization of the people for social action of various types through voluntary organizations. Mass education promoted and strengthened the political and social processes. Progress in health has to be viewed in relation to this structure within which strategies were oriented to the provision of basic needs, and the government came to assume a large share of the responsibility for social welfare, and which included a political environment capable of promoting a fair degree of community involvement and participation. The improvements in the health status were, therefore, the outcome of an effort on several fronts, which, though not consciously health-specific, had as its basis continuing interaction among various sectors. In countries with low levels of income strategies for the achievement of health for all by the year 2000 will require an intersectoral effort of this nature. The studies in Kerala State and Sri Lanka have allowed the critical elements of such an effort to be illustrated. That Thailand, at a higher economic level, has not yet achieved the same health indicators, may be partly attributed to the absence of some of these elements there, particularly the distributive and equity-oriented goals, and an environment that encourages the participation of the people in social decision-making.
Experience in Kerala State and Sri Lanka, however, indicates that, despite the success of the formal health system in reducing overall mortality and extending life expectancy, its success in eliminating the diseases in cluster 1, particularly the morbidity arising from them, has been limited. It is evident that an increase in income and economic wellbeing is essential if people are no longer to live under conditions of high risk and low resistance. The relevant question in formulating a health strategy is how rapid and how large has that increase to be in order to yield positive short- and medium-term results. It has to be noted that increases in per capita income, even if substantial, will not alone cause the conditions of high exposure and low resistance to be removed or the hard core of ill health to be eliminated. This has been demonstrated to some extent in Thailand, where per capita income seems to be higher on average for all social groups.

Within the constraints imposed by low income and the feasibility of increasing per capita income, there appears to be scope for significantly reducing the core of ill health if some of the multisectoral processes of development which reduced mortality and increased life expectancy in Kerala State and Sri Lanka were to be applied intensively at microlevel. This will require intersectoral action combining the various elements that have already been emphasized. Health care will need to be linked to action in regard to the critical health-related components of non-health sectors at community level: for example, improving the status of women and strengthening their role as key participants in the health sector; producing food in home gardens for the improvement of nutrition; protecting water; mobilizing the community for better environmental sanitation; upgrading housing; promoting physical culture activities and recreation for the community; and strengthening the linkages between the school system and the health services, as well as between the education and health sectors as a whole. This is an illustrative list; the relevant combination of critical elements and the emphasis placed on each would have to be decided in consultation with members of the community according to the local situation; it therefore requires a high degree of community participation. As the experience with programmes in Thailand has indicated, it is possible to plan for intersectoral action and community participation from the national level, but if they already existed the task of implementing a national health strategy would be greatly facilitated.

The health problems constituting cluster 2 differ according to whether a developed or a developing country is involved. Knowledge of the hazards, as well as the capacity to control and regulate them, will vary. While ill health, when it occurs, becomes the concern of the existing curative system, preventive action at the level at which the problem occurs has to be very different from that in implementation of conventional health strategies. It requires linkages and forms of collaboration between the health and non-health sectors (for example, industry, agriculture, local government, and food and various regulatory agencies) that are not normally part of the existing administrative system. The Pesticides Advisory Committee in Jamaica provides an example of the type of intersectoral collaboration needed in relation to the health problems of cluster 2.

The curative approach to the diseases of cluster 3 requires that techniques should grow in complexity and sophistication, to deal with the diseases of affluence, and to prolong life even in conditions of chronic ill health. Strategies for prevention, however, involve even more complexities than those for cluster 2, as the pathogenic factors are not germs, toxic agents, or physical hazards created by man; they appear to be deeply rooted in the sociocultural conditions of the affluent industrial society and the resulting life style. Prevention of the ill health they cause, therefore, calls for readjustments and restraint in consumption (for example, not smoking, and overcoming addiction), basic changes in life style, reorientation of the medical system, the avoidance of over-medication, and extensive social reorganization. Preventive strategies that have been implemented include special campaigns, such as the Norwegian nutrition campaign, campaigns against smoking, and the introduction of regulating and monitoring mechanisms in areas generating high health risks. They have been in response to specific problems and, in that sense, have been manageable, with limited objectives. They are examples of types of intervention that can be used to deal with sociocultural factors that give rise to patterns of ill health. To be fully effective they may have to form part of a far-reaching set of social interventions aimed at changing life style, and reviewing and restoring social forms, or altering them appropriately to deal with stress, loss of community existence, alienation, and the excesses of affluence. Various minority movements have been searching for an alternative life style, in which society is in better balance with nature, and a smaller social structure encourages greater community
participation and a richer community life, all accompanied by moderation and a more natural way of life, and capable of reducing the core of ill health that has emerged with industrialization and affluence. These movements, at present, have resulted in little more than insights and perceptions, and it is yet to be seen how more broadly based sociocultural interventions can be developed. In formulating their health strategies, governments are faced with the task of striking the right balance between the allocation of resources to research in new techniques for immunization, prevention, and cure, and the forging of stronger intersectoral linkages in order to attack the sociocultural roots of many of their health problems.
CONCLUSIONS

In formulating national health strategies continuing changes in the health status have to be placed in an historical perspective. They have to be defined in terms of the transition in health that takes place over time as societies progress from a less developed to a more developed condition.

The five case studies, in India (Kerala State), Jamaica, Norway, Sri Lanka, and Thailand, indicate that it is possible to recognize different clusters of diseases and patterns of ill health at different phases of the transition, and to examine the health situation in terms of the clusters. For example, in developing countries, particularly those with low incomes, the cluster of communicable diseases consisting mainly of gastrointestinal and respiratory infections seems to be predominant. In developed countries the cluster of communicable diseases has been replaced by a different pattern in which the cardiovascular diseases, cancer, degenerative diseases, and mental disorders seem to predominate. Another group, which may have to be approached separately, is that directly linked to progress, which contains the occupational diseases, hazards to health from toxic agents and environmental pollution, and accidents.

Any given health situation can be one of several combinations of morbidity and mortality from within the various clusters. In developing countries, the clusters associated with poverty and with modernization may often coexist, as is the case in Kerala State, Sri Lanka, and Thailand.

In defining a health situation in this manner it is possible to identify the social formations and socioeconomic conditions in which various patterns of ill health exist. Such an approach draws attention to the health-related and pathogenic factors in non-health sectors that help to produce the patterns of ill health. It then helps in recognizing the linkages between the health and other major social and economic sectors through which ill health could be caused as well as eliminated. It also helps to uncover the sociocultural and political processes that promote health and wellbeing, or that underlie the emergence of particular patterns of morbidity and mortality and cause them to persist.

The linkages between the health sector and the non-health sectors will have different emphases in different health situations, depending on the weight the various clusters have in the national health profile. Where the diseases of cluster 1 are dominant, as in Kerala State and Sri Lanka, the linkages will be between the health and the major economic and social sectors, such as those concerned with food, nutrition, sanitation, and education, and those providing income and employment. Where the diseases of cluster 1 have been controlled or eliminated, as in the case of Norway and to some extent Jamaica, the linkages must already exist. Where the health problems of cluster 2 have emerged, most of the linkages will be with industry, technology, transportation, and agencies concerned with environmental protection. In the case of cluster 3 many of the linkages will be of a different character, mainly encompassing sociocultural factors. The growing importance of this set of linkages has been illustrated in Norway.

In the developing countries, the health problems associated with infection and poor living conditions need to be controlled. However, simultaneous action is necessary to prevent the emergence of problems associated with the development strategies and the life styles that foster the conditions of ill health forming clusters 2 and 3. Primary health care strategies need to combine both approaches. In Kerala State, Sri Lanka, and Thailand the health problems of clusters 2 and 3 are becoming serious even while the predominant pattern of ill health caused by the diseases in cluster 1 persists. The principal lesson to be learnt from the experience of developed countries is that developing countries need to evolve strategies for containing, and where possible avoiding, the sequence of ill health demonstrated in the former; to do so they need to start at once. Experience in Kerala State and Sri Lanka does, however, suggest that, even at very low levels of per capita income, it is possible to achieve dramatic improvement in the health status of a population, through a pattern of development in which health objectives form part of a larger national effort directed at the satisfaction of basic needs. The situation in Thailand provides an example of the crucial role mass education, and with it female literacy, plays in creating conditions for the improvement of the health status of a population.
Whether the health status can be improved and health-specific goals achieved will depend on a great deal on the distributive processes, the degree of equity, and the sociopolitical structures that enable the people to articulate their needs and participate in social decision-making. Health strategies have therefore to be designed to link with processes that provide for equity and community participation. This has been well illustrated in Kerala State and Sri Lanka. The somewhat different combination of sociopolitical and distributive processes in Thailand also throws some light on this aspect. Despite substantially higher levels of per capita income and faster economic growth, achievements in terms of social indicators have lagged behind those of Kerala State and Sri Lanka and it is being increasingly recognized that efforts to improve the health status must be reinforced by programmes aimed more directly at reducing the wide disparities in income and alleviating the conditions of the most disadvantaged.

The approach suggested by the studies in the five countries requires the active involvement of the health sector in social development planning, in which it collaborates with the non-health sectors for the improvement of total wellbeing. An improved health status, through both prevention and care, then becomes possible. This needs the support of mechanisms for intersectoral action at all levels — national, regional and community. The studies and the subsequent consultations enabled attention to be drawn to a number of important elements that must be contained in an institutional framework and in the mechanisms for implementation of intersectoral strategies and programmes; and from the consultations several specific issues relating to intersectoral problems emerged.

In several of the case studies it was shown that formal intersectoral policy mechanisms were needed at national level. The national planning and policy-making process should provide the means of identifying and assessing the influence of national programmes and macroeconomic policies on the health of the population. This type of assessment should be a precondition for the approval and adoption of the programmes and policies. It might be carried out by the ministry of health at the request of the national planning body, or through the permanent or temporary transfer of personnel from the ministry of health to the national planning body. The ministry of health itself should develop the capacity to plan health-related intersectoral activities and to analyse the influence of non-health sector action on health goals. The ministry of health should, at the same time, endeavour to identify its own potential contributions to the goals of other sectors. The organizational units, given the responsibility of promoting intersectoral action for the first time, must reorient their activities and make the necessary changes and adaptations within their own structures to enable them to absorb their new functions.

Intersectoral activity requires, above all, the capacity for joint planning, to enable various agencies to act together to have an effective influence on health conditions. The planning process is a crucial part of intersectoral action for health. The ministry of finance must have a major role to play in developing an awareness of the interrelationship of non-health-sector actions and policies, and health goals. The information produced through the planning process, and through the national planning body, should be sent to the ministry of finance, to enable it to take account of important intersectoral linkages in managing the national budget, and determining priorities for the allocation of financial resources. The importance of earmarking funds for intersectoral activities becomes clear from the studies. The concept of intersectoral action could be upheld through the type of programme budgeting in which the financial resources allocated to each ministry are defined and designated to reflect its participation in an intersectoral programme.

The potential for obtaining external funding for intersectoral programmes can be enhanced if governments are able to show donor agencies plans for intersectoral action. From the perspective of an international donor agency, all investment projects need to be viewed in relation to their contribution to the objectives of development as a whole. Analysis of the influence of such projects on the health status and the environment should, therefore, form a routine part of their own planning requirements.

In order to prepare itself for intersectoral action, the health sector will need to understand the policy objectives and the activities of the non-health sectors, and recognize their health-related aspects. For example, increased agricultural production generally results in a greater availability of food, with a consequent positive effect on malnutrition.
and the health status. However, the agriculture sector may give priority to certain production goals without having considered their potential negative effect on nutrition. Non-food agriculture, or the production of food for export, may be given precedence. Consideration of the relevant effects of a policy decision is essential to permit alternative proposals or complementary policy decisions to be made (e.g. the provision of food subsidies for the poor) in order to avoid the negative consequences for the nutritional status. The case study in Jamaica provides an illuminating example of this type of problem in relation to agriculture and pesticides. The studies show that several of the five countries have already developed a systematic networking arrangement to identify the health-related tasks and responsibilities of the non-health sectors. The purpose is to enable them to formulate policies that are complementary and that can simultaneously advance the goals of each sector.

To be able to mobilize other sectors a health consciousness must ultimately be developed and an awareness of the effects their activities have on health goals and conditions. Tactics to develop that consciousness and to mobilize the non-health sectors include finding out who are the prime movers within the other sectors. The prime movers may be technical staff close to the policy-makers, the policy-makers themselves, or those directly responsible for the implementation of programmes. By reaching out to offer support for the goals of the other sectors, the health sector can most successfully pursue its objective of attracting their support for its own goals. The exchange of information, training activities, and other types of support can be effective in creating informal linkages, across sectors, with the prime movers who, over time, may come to form a critical nucleus well disposed to provide support from the non-health sectors for health goals. The intersectoral approach adopted in Thailand is both relevant and revealing. There the health sector appears to be consciously attempting to define health goals and implement health programmes within the broader strategy of social development.

The community is the centre for determining needs and implementing intersectoral action. Community organizations, being representative of the people, constitute one of the most important factors in social development. The information obtained during the studies in the five countries and the experiences presented during the subsequent consultations reveal the great variations that exist in the way communities are structured, in the extent to which the total needs of the people are represented, in the degree of community involvement, in the degree to which the community is subjected to manipulation by the power structure, and in the complexity of the process of community involvement itself. In some instances, the formal community structures and organizations represent a dominant political party. In others, community organizations are the basic form of public organization elected by the people. When these variations are taken into consideration, and the necessity for the community, especially its under-privileged members, to express itself and articulate its needs in any programme of development is recognized, several options emerge from the country studies.

The efficacy of decentralized action, originated by locally elected community boards supported by voluntary organizations to produce major improvements in health conditions is clearly demonstrated in Norway. Nongovernmental organizations seem to have played a major role in responding to community needs. In circumstances similar to those in Norway they constitute a resource with great potential in both planning and implementing community programmes. Another option exists in which the government, through the creation of a multisectoral team, is able to work with the nongovernmental organizations, helping them to identify the needs of the community, and to develop action programmes to meet those needs. Financial resources are made available to the organizations to help in implementing the action programmes, developing self-help projects, and enhancing their own self-reliance. Thailand again provides an example of this type of programme. In still other instances, a process of decentralization and democratization has occurred, in which more autonomy has been given to the informal organizations and to development agents at district and village levels, enabling them to collect information on the priority needs of the people and plan and implement programmes accordingly. The Sarvodaya movement and some of the efforts at planning at the local level in Kerala State and Sri Lanka are examples.

The primary lesson learnt is the necessity to involve the people themselves as closely as possible if action programmes are to be realistic. This can be done through formal groups and mechanisms, through ad hoc multisectoral groups composed of representatives from the public sector and formed to work with the people towards a common goal, and through groups
that develop programmes in response to community needs. There need not be contradiction between the enhancement of intersectoral coordination at national level and the vigorous pursuance of autonomous, independent, and effective forms of intersectoral action at community level. The two could fit well into an appropriate basis for planning.

The case studies in the five countries indicate that in implementing intersectoral programmes serious constraints need to be overcome, such as political obstacles, institutional and bureaucratic impediments, and deficiencies in regard to human, material, and financial resources.

For intersectoral action an explicit political commitment is necessary which must be communicated to all the sectors involved. Here experience in Sri Lanka and Thailand is relevant. A national health council in Sri Lanka and a national rural development committee in Thailand have brought together the political decision-makers and enabled them to address themselves to specific intersectoral policy objectives. The potential for overcoming political obstacles can be enhanced by forming networks at local, regional, and national levels of the prime movers within the various sectors. To the extent that the prime movers are close to the political decision-makers, the strengthening of the networks can help to encourage political commitment to intersectoral action. In the community, both the formal political structure and the informal power structure should be instrumental in mobilizing support for intersectoral action. The mechanisms may differ but the objective should be to create opportunities for the free expression of different views in regard to the needs of the community. The nongovernmental organizations, the mass media, and informal communication networks should be utilized to generate pressure in support of intersectoral action.

Institutional or bureaucratic constraints include the absence of governmental entities with formal responsibility for intersectoral action. Where such entities exist they often lack substantive responsibility or specific goals. Effective entities with responsibility for intersectoral action could be established formally, or an informal network could undertake specific tasks and functions. This would strengthen the capacity of national planning bodies, such as the National Economic and Social Development Board in Thailand, or institutions such as the National Health Council in Sri Lanka, for intersectoral action and for assessing the implications for health of developments in the non-health sectors.

In the case study in Jamaica, however, it was demonstrated that the mere establishment of mechanisms for intersectoral action is not sufficient to ensure effective interaction between the different responsible sectors. If it is to be effective, the administrative systems have to be appropriately adapted to serve intersectoral objectives. In Jamaica it was illustrated that coordinating mechanisms could not be superimposed on a structure that had been created to carry out sectoral tasks and work within well-defined and jealously guarded administrative boundaries. Mechanisms would therefore have to be worked out to overcome rivalries and the self-protective behaviour of bureaucracies. The health sector would need to demonstrate that it is willing to contribute to the other sectors through the exchange of information, training activities, and similar types of support. A possible method of opening up enclosed bureaucratic structures would be the joint training and reorientation for intersectoral collaboration of workers from the different sectors.

A final constraint concerns deficiencies in human, material and financial resources. Training staff together to work in teams and the transfer of staff from one sector to another is one method of overcoming human resource constraints. The pooling of expertise to contribute to the health-related activities of other sectors is another. The orientation in regard to health of community workers in other sectors could also help to produce more effective intersectoral action. All this has to be accompanied by an improvement in the allocation of health manpower and health expertise.

With regard to material and financial constraints, programme budgeting must improve in order to link financial allocations to intersectoral tasks and responsibilities. Mechanisms for the authorization of financial resources and to ensure accountability may have to be devised in order to strengthen the intersectoral component. At the same time, additional resources need to be mobilized at community level with the community assuming a considerable share of the responsibility for the way in which they are used. An important criterion by which to judge the degree of community participation is the measure of financial independence.
the organizations that represent the people are able to acquire. Community participation and the enhancement of self-reliance require action for improving and strengthening management skills within the community to enable it to make optimum use of the available resources. However, such measures for increasing community self-reliance should not result in the adoption of national strategies and policies that eschew responsibility for the equitable allocation of national resources.
RECOMMENDATIONS

1. It is necessary to extend the work already carried out on the interrelationship of the health and non-health sectors. Further empirical studies are needed in regard to the clusters of health problems that have been recognized; the social formations and socioeconomic conditions associated with them; their age- and gender-specific characteristics; the rural, urban, and geographical variations and disparities in their prevalence; and the changes or deficiencies in the non-health sectors that relate to such variations.

2. Further studies, in selected countries, of experience with intersectoral action for health should be undertaken in order to examine the relevance of the lessons it may have to offer for current and future strategies and programmes. Such studies should relate to experience at national, regional, and community levels. Care should be taken not to repeat the type of work already carried out. The various evaluations already available could be critically surveyed to examine the relevance of their conclusions for the further studies. The possibility should be borne in mind, however, that many of the past forms of intersectoral action operated within different development goals and policies and may have little relevance for the types of intersectoral action needed in current and emerging situations.

3. The institutions and research workers who undertook the five case studies should organize national workshops to present the results of the studies and the subsequent consultations to an appropriate group of policy-makers and concerned members of the research community.

4. As a continuation of the studies already concluded research activities should be undertaken and action initiated in population groups in which major health problems persist, such as those associated with infectious diseases, malnutrition, and poor living conditions. In these activities members of the affected communities should be closely involved: in the identification of needs; the analysis of the factors related and contributing to their health status; and the implementation of the activities aimed at improving their condition. Such activities should be undertaken by the research institutions that were involved in the studies, in collaboration with the health sector and other related sectors, using a multidisciplinary approach.

5. In view of the prospect that the resource constraints faced by the health sector are not likely to improve, and in all probability will deteriorate further, studies on the allocation and distribution of resources for health within the total system, including the non-health sectors, should be undertaken as a matter of priority. The outcome of such studies should provide valuable information on the options available for the allocation and distribution of resources, which could be discussed at a consultation of officials at decision-making level, including those from the finance, planning, and health departments.

6. Projects should be initiated in selected countries by which multidisciplinary teams from the ministries of health will work with the national planning bodies, or the ministries of finance, to analyse the influence of a selected number of major macroeconomic policies, development programmes, and infrastructure investments on health and the environment. Included in the projects should be an eventual examination of whether the analyses and the subsequent proposals for complementary policies produced changes conducive to the improvement of health conditions.

7. Programmes should be designed to introduce, disseminate, and put into practice the concept of intersectoral action - particularly the establishment of networks of the prime movers in the health and other sectors - within countries at national, regional, and community levels.
REFERENCES


3. Ibid., p. 110.


8. Ibid. (ref. 2), p. 154.

9. Ibid., p. 112.

10. Ibid., p. 148.

11. Ibid., p. 149.


